

CLINICAL MEDICINE AND SURGERY

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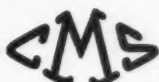
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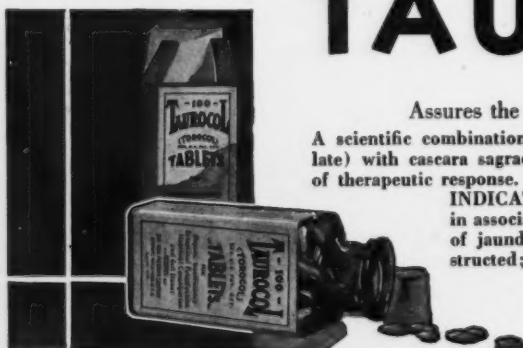
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GEORGE B. LAKE, M.D.

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Vol. 41

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No. 1

EDITORIAL

Claude Bernard

Founder of Experimental Medicine

WHEN some new and epoch-making theory is advanced or line of work undertaken, the thoughtless say, "How simple! It is a wonder that this was not seen years ago." But the man of keen perception realizes that the roof cannot be put upon a building until its framework has been constructed, and that many important pieces of knowledge are always awaiting some discovery which will bring them to light. Modern endocrinology, which now takes such a leading place in medical progress, might have been delayed for a century without the penetrating researches of Claude Bernard and his stimulating influence upon his pupil, Brown-Séquard.

Bernard was born in the village of Saint Julien, near Ville-franche, in France, July 12, 1813, and grew up among the vineyards of his father, who was a wine-maker of that region. He was a promising lad, but the family finances were inadequate to give him advanced schooling, and so he became an apothecary's apprentice at Lyons.

Having a romantic soul and a vivid imagination, young Claude turned to writing and

brought forth a vaudeville comedy which was produced with some success. He then turned out a five-act tragedy and took it to Paris to find a producer, but was advised, by the wise Girardin, to study medicine.

Bernard's early career as a medical student was not highly successful, for the spirit within him could not bow the knee to "recognized authorities" and he wanted to know why. But when he came in contact with Magendie, he met a man great enough to recognize greatness in another, and his path was made clear before him.

With Bernard's work, the history of experimental ("modern scientific") medicine begins. He expressed his attitude toward scientific investigation thus:

"Put off your imagination, as you take off your overcoat, when you enter the laboratory; but put it on again, as you do your overcoat, when you leave the laboratory."

Dumas said of him, "He is not a great physiologist: he is physiology itself."

It was he who, about 1848, discovered the glycogenic function of the liver, and, realizing that this was something entirely new in

physiology, coined the term, "internal secretion" and laid the foundation for the spectacular work of Brown-Séquard, which brought the new science of endocrinology to birth.

In the minds of many, this widely heralded discovery has thrown some of his other, and perhaps equally important, work into the background; but we must not forget that it was Bernard who first recognized the importance and the triple function of the pancreatic juice; the fact that puncture of the fourth cerebral ventricle, in dogs, produces temporary diabetes; the structure and activities of the vasomotor mechanism; the nature of carbon monoxide poisoning; and a number of other matters of basic importance.

But it is less his actual discoveries, in detail, upon which the fame of Bernard rests, than his superb presentation, in practice and precept, of the *scientific method itself*. Of his "Introduction to the Study of Experimental Medicine" Pasteur said, "Nothing so complete, nothing so profound and so luminous, has ever been written on the subject." His youthful literary experiences gave a vivacity, brilliance and facility to his writings which will make them fascinating reading for all time. His courses of lectures at the Sorbonne and the Collège de France, where he succeeded his teacher, Magendie, as professor of physiology, in 1855, have exerted an immense influence on medical science in general.

This tall, imposing, distinguished man, who gave his life to science, sacrificed his domestic happiness upon the same altar, for his wife and daughters (he had no son but that spiritual son, his famous pupil) had no sympathy with his researches and looked upon him as merely a heartless vivisector, feeling that he should devote his genius to the development of a lucrative practice. So they left him to live and work alone; and it is said that one of his daughters actually hated him.

But the honors that came to him, in his lifetime, must have offered some compensation. Besides his professorships, he was admitted to the Académie Française in 1868

and, through the influence of Napoleon III, who was fascinated with his personality, was made a senator in 1869, holding these positions for a number of years before his death, in 1878, at what we now consider the rather early age of sixty-five.

A statue of him was erected on the steps of the Collège de France in 1886, but a nobler monument is found in the words of Pasteur:

"I seek in vain for a weak point in M. Bernard. His personal distinction, his gentle kindness attract at first sight. He has no pedantry, but an antique simplicity, a perfectly natural and unaffected manner, while his conversation is deep and full of ideas."

Earthly Immortality

IRRESPECTIVE of what one may believe or know regarding the survival of individual consciousness beyond the change called death, there is a type of limited, mundane immortality which is within the reach of everyone who cares to strive for it and is well worth the effort entailed. This immortality is based upon worth, work or words or any combination of these.

Men are remembered, indefinitely, for what they are—the kind of human beings, citizens, neighbors, husbands, fathers, sons or friends they were when they inhabited bodies. That is, their memory goes on if they were conspicuously satisfactory or disastrous in these relationships. Jesse James is almost as immortal as George Washington though few of us would care for his type of fame.

Men are remembered for what they do, build, make or discover, provided their acts, constructions or discoveries are of benefit to mankind. Few remember who built the first armored warship, but many can tell, at once, who built the first steamboat.

Men are remembered for what they say and write, if their utterances are sufficiently helpful or facinorous; but more immortality has been given by those who have been helped by Plato or Marcus Aurelius than by the ones who have been corrupted by Machiavelli.

The basis, then, of this earthly type of immortality is good character, useful industry and helpful communication; and these are, to a greater or less extent, within the reach of all. Be good, after the highest pattern you can visualize; do good—think, create, be active; speak (with tongue or pen) honestly, sincerely, kindly and earnestly, and you will be remembered after your corporeal frame has crumbled into dust.

Progress in the Science and Art of Medicine—1933

AGAIN we attempt to sketch an outline of the advances made in the science and art of medicine during the past year, which appear to be of the greatest basic and general importance, emphasizing once more that this evaluation is merely the opinion of one person who has studied the world's medical literature rather carefully.

General Research

So far as one can judge, at close range, there have been few or no revolutionary discoveries during the past year, but much progress has been made in consolidating previous gains.

The growing interest in and importance of the study of the cause or causes and treatment of **cancer** have been increasingly in evidence during the past year, and the opinion seems to be gaining ground that this group of diseases is a manifestation of constitutional dyscrasias or perversions of metabolism and body-chemistry, rather than merely a local lesion. Investigations along this line are in progress, some of which are based upon the revolutionary discoveries in the field of *atomic physics*, which have been made during the past few years.

Studies of the **vitamins** have gone forward with increasing vigor, and ideas regarding the **vitamin B complex** are beginning to clarify. **Vitamin C** has been isolated and *synthesized* (the first vitamin to be so handled). The opinion seems to be growing, that most human beings suffer from minor degrees of vitamin deficiencies, which can be overcome by a proper vitamin-reinforced diet. This may or may not be true, but should be studied by all clinicians. Haliver oil (vitamins A and D) has become, perhaps, one of the most widely used pharmaceutical products, and is now being incorporated in a medicament (Haliver Malt), containing other vitamins (B and G), mineral salts and diastase. Cod-liver oil is being reinforced with other fish-liver oils, so as to increase its vitamin content five times (thus reducing the dose), and offered in 10 and 20 minim capsules, as well as in the liquid form.

The use of vitamins A and D in hay-fever and allergic disorders appears to be on a firmer foundation and merits general use, with careful observation. It is suggested that vitamin B bears a specific relationship to *diabetes*, certain anemias (as sprue) and various deficiency diseases. This may be one of the reasons for the disastrous results of

carelessly-prescribed restricted diets in *diabetes*, which are now coming in for much study.

Bacteriology and *immunology* are still in an unsettled state; and it would seem unwise to overlook the theses of J. E. R. McDonagh, which bid fair to lead us to some new light on the subject.

The study of **tuberculosis** seems to be in the "gleaning stage," the heavy harvest having been reaped. Tuberculin MA100, mentioned in last year's Progress Editorial, has caused too many misleading sensitizations, and Seibert has prepared a modification of it which appears to work better. It is now recognized that tuberculosis can be spread through the blood, as well as by continuity, through the bronchi. A combination of viosterol, parathormone and tuberculin seems greatly to hasten the calcification of tubercles. The importance of fungous infections of the lungs is being more generally recognized.

Recent studies have shown that the types of **typhus**, seen in the Old World and the New, are closely similar (both are due to *Rickettsiae*), but not serologically identical. The subject is clearing up as studies advance, and a method of immunization will probably be developed soon.

Nothing basically new in surgery has developed during the past year, except, perhaps, Cutler's suggestion of totally removing apparently normal thyroids for the relief of angina pectoris.

Researches in the higher physics, especially atomic physics and the more powerful and universal radiant energies (cosmic rays), may change our entire concept of life, health and disease within another generation. A recently reported experiment seems to show that energy has actually been converted into matter in the laboratory, and Augusta Gaskell's theory of the origin of life (reviewed in this issue) gives abundant food for thought.

Health and disease are more and more being interpreted in terms of *equilibrium* or its lack, in regard to the acid-base and other mineral balances, the endocrines, the vitamins and other food factors, etc. McDonagh's ideas seem to be receiving confirmation.

The photographic and cinematographic documentation of medical and other scientific subjects has assumed such importance that a Congress along that line was held in France last October.

Therapeutics

One of the notable recent trends in therapeutics is the increasing study of dietetics, in the light of the newer knowledge of the vitamins and of mineral metabolism, and the part played by these researches in preventive dentistry.

The announcement, by Trippe, of the favorable results following the oral administration of *Metaphen* in gastric and duodenal ulcer, has been confirmed by a number of others during the year. This drug has also been recommended in the treatment of ulcerative colitis. The use of *gastric mucin* in these conditions has been facilitated by the improvement and commercial production of that substance; and *vegetable mucins*, for the same purpose, are being studied carefully.

Two new and apparently valuable anesthetics have been introduced during the year: *Evipan*, for intravenous use, and *Diothane*, for topical application. The former is suitable for employment as a basic hypnotic or, in combination with *Pantopon* and *scopolamine*, as a definitive anesthetic for minor and major operations. The latter makes a non-irritating, stable and boilable solution, having a wide field of application.

Among the other new therapeutic offerings are: *Dilaudid*, a promising succedendum for morphine (discussed in this issue); *Atabrine*, an antimalarial drug said to be several times more powerful and less toxic than quinine; a special solvent for the arsphenamines, which materially reduces their toxicity; a *painless hay-fever antigen*, prepared in a dextrose menstruum; a relatively non-toxic thyroid preparation (*Endothylin*), especially useful in the treatment of obesity; an aluminum-precipitated *diphtheria toxoid*, one injection of which confers immunity; an autolyzed liver concentrate, to simplify the treatment of the primary anemias; and a number of others, of relatively less importance, so far as one is able to judge at close range.

Physical Therapy

Though still in the experimental stage, the *Micro-Dynameter* gives considerable promise of developing into an important apparatus, along the lines of the newer findings in biophysics, which are discussed by Woodbury in this issue.

The *Hymanomotor*, an apparatus for restoring the heart beat in cases of apparent death from shock, will fill a need, if it works out according to specifications.

A number of improvements in x-ray tubes, for diagnosis and treatment, have been made

during the year; and another of the "million-volt" machines, producing rays comparable to those of radium, has been installed in Chicago.

A machine for generating ultraviolet energy in the interior of the accessible hollow viscera, by means of special applicators, has been introduced.

Economics

The revolutionary process of socializing our Government has proceeded so far and so fast during the past year, that one wonders if the medical profession can do anything to stop it. However, continual watchfulness and effort may still accomplish something.

The so-called Tugwell Bill is one of the most threatening measures now on the way, and an appeal to all representatives in the Congress to kill it or amend it so as to save the pharmaceutical manufacturers and the pharmacists, as well as the doctors, should be made.

The medical colleges continue to turn out physicians faster than they die or retire, so that there are more and more competitors for what practice remains from the inroads of the free and nominal-payment clinics and the unwarrantably extended public health activities.

Less is heard at the end of the year, about the report of the Committee on the Costs of Medical Care; but the profession should not assume that the pernicious possibilities of that document are exhausted, but should keep alert and active to prevent the socialization of medicine at a faster rate than that of the general scheme of things, at least. An awakened and cooperating medical fraternity may still be able to save much; but indifference and selfishness may sell us into economic slavery.

I do not believe in science for its own sake; I believe only in science for man's sake.—KARL PEARSON.

Is Patriotism Out of Date?

A GENERATION ago, to call a man a sterling patriot was to pay him a high compliment; but, so great has been the power of the propaganda of internationalism, that today that designation seems to carry, for many, a stigma of Victorianism.

We have heard much about the virtues of brotherly love (which cannot be overpraised) and of our high mission to save the world (which sounds like bunk, when we have done such a poor job at saving ourselves), but little about the advantages of loving and working

for our own country; and practically nothing about the costs and dangers of selling our birthright for a mess of international pottage.

Now comes Samuel Crowther, telling us the story in a manner so clear and straightforward that any high-school graduate can understand it. Here is the kernel of the nut:

We are now in a position to be self-sustaining as a nation—we do not need the things the world is trying so eagerly to sell us, and we do need the things we are trying (under a mistaken impression) to force upon a more or less unwilling world. We can have an enlightened nationalism, with a home market amounting to over \$600 per capita per year; or we can have internationalism, at a cost of reducing our national per capita income to the world level of \$153. *We cannot have both!* Which do we want?

Read Crowther's book (reviewed in this issue) and see if you are still convinced that patriotism is out of date.

The real enemies of any people are groups of men who want things for themselves.—WILL LEVINGTON COMFORT.

Selling Samples

The manufacturers of pharmaceuticals for the use of physicians are eager to do all they can to help the people they are working for and make them familiar with the new things which are being prepared for their use in the treatment of disease. With that end in view, all or most of them are willing to back up the claims made in their literature by furnishing clinicians with samples of their products, with the implied understanding that these will be used by the physician in acquainting himself with their powers and limitations.

But evidence is coming to light that this generosity and helpfulness extended to physicians is being abused by certain careless or venal members of the medical profession, with the assistance of certain unscrupulous pharmacists.

The procedure is this: Some person, either in the employ of the pharmacist or on his own initiative, canvasses the offices of physicians and buys, from the doctors themselves or from their office assistants, such unused samples as he knows or believes will have a resale value which will show him a profit. These are then resold to the unscrupulous pharmacist, who uses them in filling open or unspecified prescriptions.

This wholly unjustifiable practice has a number of disastrous results: It cheats the manufacturer who sent the samples; it endangers the health, or even the life, of the patients to whom they are dispensed (the drugs so handled may be, and frequently are, deteriorated in one way or another by age, so as to become relatively valueless, or dangerous by reason of undue concentration); this latter fact may impair or seriously damage the professional reputation of the physician who wrote the prescription or the firm that prepared the medicine; and the moral fiber of all who are parties to such practices becomes deteriorated.

The upright and conscientious physician will not ask for samples of medicines which he does not intend to put to actual clinical test; and, if they are sent to him without his request, he will either hand them to some confrere who will be interested in using them, or see to it that they are immediately destroyed, so that they may not fall into the wrong hands.

If the medical profession desires and expects to continue to receive the generous cooperation of pharmaceutical manufacturers, in the matter of samples, its members must play the game with the same honesty they would demand if the circumstances were reversed.

We feel sure that few of our readers have ever indulged in such unethical practices; and that, if any have done so, this suggestion will cause them to abandon them at once, because the small sums which can be so received are a wholly inadequate recompense for the loss of one's integrity.

Freedom is deserved only by those who can be trusted not to abuse it.—ROBERT QUILLEN.

The Purpose of Adversity

WHAT do we want from life—not the concrete details; not the essentials—air, food, shelter and warmth—upon which the continuance of life depends, but the basic type of things which lie within our power of choice and determine the little wants of every day?

There are two answers to that question—strength or comfort—and the way any individual answers it makes clear his status in the scheme of things and enables us to predict his conduct under various circumstances. Moreover, if we observe one's conduct, we can find out how that individual has an-

swered this question in his *heart*, whatever he may say with his mouth.

For the seeker after comfort, adversity has no meaning of which he is conscious, and he laments bitterly under its lashings and sometimes mistakenly tries to escape from it by ending his physical existence. But it still has a purpose, even for such an one—to drive him out of his snug retreat into the glorious, but turbulent, stream of evolution.

Fortunately for the world, most of its inhabitants have chosen the acquirement of strength as the goal of their ambition, and when such individuals become conscious that the purpose of adversity is to enable them to reach that goal more speedily and certainly, they cease to resent its coming and begin to study how they may use it to the best advantage.

If a man has set out to win a boxing championship, he willingly submits to restrictions upon his eating and drinking; to strenuous physical labors which, if no special end were in view, would be considered bitter hardships; and to the mauling of his sparring partners, which most people would consider cruel punishment. But, out of all these seeming adversities, he extracts the strength and the wisdom which will enable him to overcome his adversary, because he studies them and bends them to his purpose.

Are we blindly and ignorantly suffering the "slings and arrows of outrageous fortune," or are we cheerfully accepting the rigorous training that Life gives to its potential champions and learning from it how to vanquish those inanimate, as well as animate, adversaries which we call the circumstances of our environment?

The reward for climbing a mountain is not the view from the top, but the exultant thrill of experiencing a sense of that power which enables us to make the difficult ascent successfully.

Happiness is not the result of obtaining the things we desire, but of being able to desire largely and intelligently—of making each goal achieved the starting point for new efforts. The unhappiest man on earth is he who has gained everything he ever wanted and sees nothing to be desired which is beyond his reach.

Consider the player of a game. He would probably say that his sole desire is to win; but if his opponent is stupid or unskillful, so that winning offers no difficulty, he promptly loses interest in the contest. What he truly wants is an opportunity to match his strength, skill and wits with a worthy adversary. It is the *effort* to win that gives him pleasure—the sense of well-expended power that makes him happy.

A child in its mother's womb is perfectly comfortable; but few sensible adults would choose to exchange their present opportunities for accomplishment, however painful or dangerous, for a return to that larval condition of snug vacuity, which only in a biologic sense can be considered as living.

Life is not a creation; it is a *creating*—it is movement, change, progress. The lasting joy of a race is in the *running*, not in receiving the prize, for that is over in an hour or a day.

And what is it but adversity—difficulties, dangers, problems—that keeps us up to the training which hardens the sinews of the spirit, as well as of the body, and, if rightly used, makes us the conquerors of circumstance which all of us were meant to be?



Photo by G. B. L.

BLEAK SHORE

LEADING ARTICLES

Recent Progress In Preventive Medicine

By H. S. Cumming, M.D., D.Sc., LL.D., Washington, D. C.

Surgeon General, United States Public Health Service

THE average medical man is fully aware of the great progress which the healing art has made during the past century. The world of bacteriology, which Pasteur opened for us, revolutionized our concept of many diseases and provided means for their prevention and cure. The introduction of anesthesia and the work of Lister made possible progress in surgery theretofore impossible. There is a tendency, however, to feel that most of the important advances in medicine were made several years ago. It is interesting, therefore, for us to cast about and consider the progress that has been made in the field of preventive medicine during the recent past. For purposes of clarity and greater definiteness this may be taken to cover a period of approximately the past five years.

There is no justification for the more or less artificial and poorly defined division of medical science into preventive and curative medicine. The object of public health work is to prevent illness and pain and premature death. The interests of the people, as represented by Government, are equally affected by helpless individuals, whether made so by heart disease, rheumatism, general paralysis of the insane, or by smallpox, bubonic plague or infantile paralysis.

The physician or surgeon at the bedside, the health officer in the field, and the research worker in the laboratory are all, directly or indirectly, consciously or unconsciously, public servants working for the public good. The ideal for which we all aim is the application of every available means for the prevention of disease or injury and the provision of suitable treatment for all sick or injured. The problem is, how this ideal may be attained with the greatest good to the common weal. All medical practitioners of whatever branch must also be practitioners of preventive medicine. There is preventive medicine which is applicable to the individual, and there is preventive medicine which is applicable to the community. The practice of preventive medicine for the individual patient and the practice of preventive medicine for the community are not the same.

Persons who talk about physiology, pathology and bacteriology in preventive medi-

cine, apart from the clinical examination of patients affected with the malady, are not wise in their generation. Surgery may be claimed as one of the greatest preventive instruments of medical science which we have. Operations within the scope of preventive surgery come quickly to mind. Circumcision is an example—perhaps the oldest of all examples—of preventive surgery. The removal of enlarged tonsils and adenoids, the treatment of spinal curvature, fractures, dental caries, rickets, tuberculosis—are all examples of preventive surgery.

Turning to preventive medicine which is applicable to the community, as distinguished from the individual, we find that considerable progress has been made in recent years.

Diphtheria Toxoid

Although gratifying results have been and still are being secured in the treatment of diphtheria with antitoxin, active immunization by use of toxin-antitoxin was developed several years ago, largely under the stimulus of Dr. W. H. Park, of the New York City Health Department. Toxin-antitoxin was found to be highly successful in changing positive Schick tests to negative, and has naturally reduced the diphtheria death rate.

About five years ago diphtheria toxoid, a modified non-toxic immunizing preparation, came into use in the United States. This preparation, developed through the work of Professor Ramon, of the Pasteur Institute, has the advantage of being less likely to produce unpleasant reactions and of not sensitizing to alien serum protein; and most authorities believe that it is equal to, if not distinctly better than, the toxin-antitoxin mixture in the production of immunity. In 1932, through the work of Dr. L. T. Havens, a modified toxoid was developed—an aluminum-precipitated preparation, that has the advantage of being more slowly absorbed than the regular toxoid and probably, for that reason, gives a higher degree of immunity. It appears likely that this preparation will replace all other diphtheria prophylactics.

With reference to the administrative phase of diphtheria control, it may be said that the immunization of school children has been steadily increasing, especially in most large

communities. Public health efforts toward diphtheria immunization of the more important age group, the pre-school child, have been less successful. However, it can be said that there has been a very pronounced reduction in diphtheria mortality and morbidity since prophylaxis by immunization has become more generally applied.

Undulant Fever

Until a few years ago, undulant fever was recognized in the United States only in a small number of cases arising from contact with infected goats in the southwestern States. Since Dr. Alice Evans showed the substantial identity of the organisms causing contagious abortion in cattle and undulant fever in man, clinicians and laboratory experts began to recognize that undulant fever of bovine origin was by no means rare in the United States, though generally not so diagnosed. At the outset, the disease is often mistaken for influenza. During recent years over 1,200 cases annually have been reported in this country, and special surveys in rural communities have shown the incidence to be decidedly higher than the rate derived from the above figure. The disease has been found to be one chiefly of rural communities and small cities and confined largely to the age group above 10 years.

Three types of causative organisms have been recognized in the United States—one derived from goats, one from swine and one from cattle—although there is lack of agreement as to the criteria of classification of these members of the *Brucella* group.

Although these valuable contributions have been made in recent years to the etiology and epidemiology of undulant fever, the measures available for the prevention of the infection are not very satisfactory. Cases of contact origin can probably be avoided, in large measure, by wearing rubber gloves when handling infected animals and animal products; while infection from the abortus organism can be avoided by proper pasteurization of milk. The problem of prevention is largely one for veterinary pathologists, and it is encouraging to know that they are engaged in efforts toward its solution.

Pellagra

Pellagra continues to be an important factor in morbidity and mortality, especially in the southern and southeastern sections of the United States. Prevalence of the disease is associated with economic status and dietary habits. Ever since Dr. Joseph Goldberger, of the Public Health Service, demonstrated beyond question that pellagra is due to a specific dietary deficiency, attempts have been made to educate the people living within the areas of prevalence regarding the necessity of making radical modifications in their customary diet. The most important pellagra studies in recent years have had to

do with the determination of the foods which have the highest pellagra-preventive properties and are adaptable to production in the districts where the disease is most prevalent. Unless cases of the disease are too far advanced, treatment by means of a well-balanced diet has been found to be highly successful in effecting a rapid cure. Incidentally, in these studies it was shown a few years ago that blacktongue in dogs, for practical purposes, is identical with pellagra in man, and the dog has served a very useful purpose in the experimental determination of the relative pellagra-preventive value of various foods.

Rocky Mountain Spotted Fever

Until 1930, Rocky Mountain spotted fever was thought to be confined to the northern Rocky Mountain area of the United States. In the past four years it has been found, by workers of the Public Health Service, that it is also present in the eastern and southern parts of the United States, and it appears that the greater part of the United States is in the endemic area. It has also been shown within the past year that a disease described as exanthematic typhus of Sao Paulo (Brazil) is identical with Rocky Mountain spotted fever, and other investigations suggest that the *fièvre boutonneuse*, of the Mediterranean littoral, is very closely related to spotted fever, if not identical with it. The epidemiologic and clinical descriptions of "Kenya" typhus, of East Africa, are very suggestive of spotted fever, and it is suggested that spotted fever may exist unrecognized in other parts of the world, especially in Central and South America.

Spotted fever is transmitted by several species of ticks under laboratory conditions, and the virus has been recovered in the United States from at least two species of *Dermacentor* found in nature in endemic areas. *Dermacentor andersoni* and *Dermacentor variabilis* seem to be responsible for most of the human cases in the United States, while in Brazil other species may be vectors.

Methods of control for this disease have been directed toward the eradication of ticks, without any very marked success. A vaccine developed by an officer of the Public Health Service, prepared from infected ticks, has been in use in the United States for about seven years. This vaccine apparently is of value in the prevention of the disease. The protection afforded by the vaccine is seemingly not permanent and the vaccination is usually repeated at the beginning of each tick season. In the 1933 season the production and distribution of this vaccine was 3,600 percent more than that produced in the first season of its use—1925-1926.

Endemic Typhus

Through the investigations of Dr. Nathan Brill (1898-1915) and Dr. K. F. Maxcy (1923-

1929), it was definitely established that endemic typhus of the United States is not louse-borne, as is the case with European typhus. Epidemiologic studies by Public Health Service investigators showed that some other vector was responsible, and the hypothesis seemed warranted that a reservoir of the disease existed in rodents. Investigations during the past four years have shown that the rat flea, *Xenopsylla cheopis*, is readily infectible with the typhus virus and that it readily transmits the disease from rat to rat. It was found that the virus multiplies most rapidly in the rat flea and that it is present in the excreta of infected fleas. Evidence secured indicates that the disease is transmitted by rubbing infected flea feces on the abraded skin or through puncture wounds made by the flea in feeding. Rat fleas are also infectible with the virus of epidemic typhus, or "Old World" typhus.

In the prevention of endemic typhus, measures for the control of rats are clearly indicated.

Malaria

In two particulars the study and control of malaria have been remarkably advanced in recent years: The synthesis of new remedies for the disease has given us more and better weapons for attack; and the use of malaria in the therapeutics of certain mental diseases allows the study of the disease under closely controlled conditions. The existence of a relative immunity in the Negro, at least in the southern United States, to infection with benign tertian malaria has recently been established; and the proof that there are many strains of malaria, differing in virulence and in resistance to drugs, and that there is a lack of any cross-immunity among them, has thrown much light on the epidemiology and therapeutic action of drugs.

The existence of a new species of malaria parasite, *P. ovale*, has been found in Africa; and recent studies have shown the existence of a polymorphic parasite, capable of existing in man and in several species of monkeys, which opens a wide field for controlled animal experiments with drugs.

The subject of treatment is in a most unsatisfactory state. The synthesis of new anti-malarial agents, notably *plasmochin* and *atabrine*, has opened up new vistas. Plasmochin, in minute doses, has been shown able to sterilize the gametocytes of all forms of malaria, rendering them non-infective to mosquitoes, and offering a method of control based on this unique property. Atabrine has been proved a potent agent in treating primary cases of malaria, but its inability to prevent relapse has disappointed the hopes of many who hailed it as the final solution of the problem of treatment. Studies have shown that plasmochin must be given in doses dangerously beyond the limits of normal toler-

ance to prevent infection. Quinine has been shown to have no effect in preventing actual infection, but it is of decided utility in "prophylaxis by treatment." Atabrine cannot be used over long periods, as even small doses yellow the skin.

Epidemic Encephalitis

About the end of the World War, a form of encephalitis was recognized, occurring in groups of cases and usually characterized by apparent drowsiness or lethargy. This form was, therefore, called "lethargic encephalitis." The tendency now is to abandon the term "lethargic encephalitis" in favor of "epidemic encephalitis," because a considerable number of the cases show excitement and increased activity rather than lethargy, and because the grouping of the cases is often such as practically to constitute an epidemic.

From July 1 to October 1, 1933, there were reported, in the city of St. Louis, Mo. and its environs, 1,029 cases, with 187 deaths. Cases of apparently the same inception have been reported from other cities in Missouri and neighboring States, but it is to be noted that so-called epidemic, or lethargic, encephalitis and encephalitis not otherwise designated have a yearly incidence throughout the entire United States similar in magnitude to poliomyelitis, as judged from mortality statistics, usually without the marked seasonal and yearly fluctuation of poliomyelitis.

Clinically, the St. Louis outbreak resembled other epidemics of encephalitis, but especially that described as occurring around the Inland Sea of Japan in 1924. It has differed from most other outbreaks in that ophthalmoplegia, ptosis and strabismus are much more uncommon, while demonstrable meningeal involvement is practically uniform in the recognizable cases; as observed thus far, recovery has been more often prompt and complete.

The pathologic lesions are similar in nature to those found in other epidemics of encephalitis (not the postinfectious demyelination encephalitis), but are more diffuse through the brain and meninges, without special localization in the basal ganglions and brain stem.

Epidemiologic studies are being conducted by the United States Public Health Service in connection with the health departments concerned, and insect transmission experiments, particularly with mosquitoes, are being conducted by the Public Health Service. The possibility that this is a new type of epidemic encephalitis must be considered. The question therefore arises as to whether the outbreak which has occurred in the United States this year is a new type of this disease or a variation of the old form. The possibility that this new form of epidemic encephalitis may in future years show a more in-

tense prevalence renders urgent as complete a study of this epidemic as possible.

Psittacosis

During the late months of 1929 and the early months of 1930, an outbreak of psittacosis occurring in various parts of the country was traced to parrots recently imported or to birds which had been in contact with birds recently imported. There were approximately 160 cases, with about 40 deaths. In each subsequent year a few cases have occurred. Some of these infections came from imported parakeets, but others were undoubtedly due to contact with birds raised in the United States. About two years ago cases occurred in California, clearly traced to parakeets bred in the southern part of the State. The problem became so important that, in the summer of 1932, the Public Health Service established a laboratory at Pasadena, California, for the special study of this infection in birds and in human beings.

The clinical aspects of the disease, as it has occurred in the United States, presented no noteworthy deviation from cases seen in other parts of the world. It may be of interest to note that the initial diagnosis usually is influenza; and, indeed, the symptoms of onset, and for the first few days or even longer, make such a diagnosis very likely. The pneumonia, which is so readily demonstrated by physical signs and x-ray findings, presents relatively few symptoms. There have been a few examples of transfer from person to person, but the infection is usually acquired from birds.

Serum from convalescent patients has been used extensively, and in the opinion of some clinicians is of great service. A noteworthy development has been the observation that the infection is due to a filtrable virus and not to the bacterial factor (*Nocard's bacillus*), which was long regarded as the causative agent. Another important observation is that, in the laboratory, the infection is readily communicable to white mice, in which animals the pathologic lesions present a rather characteristic picture.

A third observation of importance is the demonstration of inclusion bodies, termed *Rickettsia psittaci*, in human lesions and in the lesions in parrots.

Scarlet Fever

Little progress was made in active immunization against scarlet fever from the time of the Russian bacteriologist Gabritschewsky, in 1906, until Dick and Dick, in this country, in 1924, demonstrated a hemolytic streptococcus from a bullion culture which produced symptoms of scarlet fever, except for the active throat infection, and showed that toxin was actually present in the absence of the bacterial cell. This led to the development of the immunity test and to active immunization against scarlet fever.

Graduated doses of toxin, given at weekly intervals, have been found to produce satisfactory immunity in 80 to 90 percent or more of persons treated.

Within recent years, Public Health Service investigators have produced a more potent toxin and a toxoid-anatoxin, which have given highly favorable results. Using the Ramon method of detoxification, this toxin can be made practically atoxic without destroying its antigenic properties. More recently, 0.5 percent of potassium and aluminum sulphate has been added to the toxoid prior to use, and immunization tests in a limited number of susceptible children indicate that one dose will produce immunity in over 90 percent of those treated.

Ginger Paralysis

In 1929 and 1930, a peculiar form of paralysis, unlike anything known before, afflicted a relatively large proportion of the population in certain sections of the United States. Investigation revealed that the condition was associated with the drinking of an adulterated fluid extract of ginger. As it could not be due to the ginger as such, it was evident that it was caused by some unknown poison or some known poison whose action was altered by the ginger or alcohol so as to render it unrecognizable. United States Public Health Service investigators soon found that some form of phenol was the causative agent, and further study revealed that tri-ortho cresyl phosphate, either itself or in combination with other chemicals of a harmless nature, produced in animals the same kind of paralysis as that caused in man by drinking the ginger extract. Tri-ortho cresyl phosphate was, therefore, definitely established as the specific cause of the "outbreak" of paralysis. This remarkable substance was probably used as an ingredient of a substandard fluid ginger extract made and sold for beverage purposes, because of its physical or other properties, which made it difficult to distinguish it from the normal ginger constituents. This investigation may lead to the discovery of other organic compounds of great medical interest and possibilities in the treatment of disease.

Milk

The most important public health aspects of milk sanitation in recent years, especially in the United States, are concerned with the promotion of the use of pasteurized milk, standardization of the milk control ordinances, and research in pasteurization and pasteurization machinery. In the past five years there have been over 200 outbreaks of milk-borne diseases in the United States. In 1928 there were 212 American cities which had adopted the Standard Milk Ordinance, as compared with 562 in 1933. In 1927, 81.8 percent of the milk used in cities was pasteurized, as against over 90 percent in 1933. The

United States Public Health Service has established a Milk Sanitation Experimental Plant in Washington, where studies are being conducted on pasteurization methods and sterilization of dairy and pasteurization plant equipment.

Studies of Health and the Economic Depression

Probably for the first time, special studies are being made regarding the effect of the economic depression on health during the period of depression. As the death rate does not immediately reflect increased illness and physical impairment, the Public Health Service undertook a house-to-house survey in 1933, of illness, income and employment records for the four years 1929-1932. Preliminary figures have revealed a health situation less favorable than that indicated by mortality figures; a higher sickness rate has been found among the families most severely affected by the depression. The investigation is still in progress.

Need for Continued Research

The necessity for research work in the field of public health is fully as important today as it was 25 years ago. Although there have been many important discoveries relating to the preservation of health and the prevention of disease, there still remain many problems to be solved. The so-called degenerative diseases are now much the more important causes of death. Studies in this field offer opportunities for important advances.

There are problems relating to a number of the common communicable diseases which are yet to be solved, among which are whooping cough, measles and meningitis.

In a special group may be mentioned the virus diseases, such as infantile paralysis, epidemic encephalitis and influenza. Perhaps some new developments in the field of bacteriology will place within our hands the necessary weapons with which we shall be able effectively to cope with these diseases.

Ether and Chloroform Narcosis as a Treatment for Cancer

By Robert W. Benner, M.D., Tiffin, Ohio

ON REVIEWING the literature regarding the surgery of cancer, one is impressed with the favorable results that so frequently follow the removal of a large metastatic carcinomatous mass from the abdomen. We are astonished at times at the beneficial effects of merely an exploratory operation, in which the growth is found to be unremovable. In an amazing number of instances the watchful observer will note that the patient's general condition is greatly improved and death does not occur as anticipated.* This improvement in general health is highly gratifying, not only to the patient, but to the surgeon as well, for the latter feels that his work is justified, even though he performed merely an exploratory operation. Is he entirely correct in believing, after doing a resection or complete hysterectomy or after making a new opening into the stomach because of carcinoma of the pylorus or making a new anus because of carcinoma of the rectum, that his efforts alone account for the years of enjoyable life that so frequently follow? To be sure, there may be a recurrence, but the fact that the destructive onslaught of the

cancer has been temporarily checked may prove to be very significant. In his eagerness to add one more successful case to his records, has he not failed to consider another possible factor? In brief, what effect does an ether- or chloroform-saturated body have on cancer cells?

The Acid-Base Balance

First let us familiarize ourselves with the recent scientific work that has been done in regard to the acid-base equilibrium of the body in patients undergoing ether or chloroform narcosis. Schere² has recently reviewed the literature on the rôle of anesthesia in the changes of the alkali reserve, observed after surgical interventions. He found that all authors agree that general anesthesia, especially if performed with chloroform, brings about an intoxication and a state of shock, producing a lowering of the alkali reserve.

Various theories, such as the liberation of phosphoric acid by the muscles and its storage in the blood with free elimination of alkaline ions, the increased production of lactic acid, and the inhibition of the respiratory center under the influence of anesthesia, have been given as an explanation for the appearance of postoperative acidosis. According to Schere, Cannon believes that there exists a great parallelism between the fall of the blood pressure and the diminution of the alkali reserve. Schere believes that the arterial hypotension which follows general and

*Mauritz Persson,¹ of Stockholm, has recently compiled data on the postoperative results of 200 cases of gastric resection for cancer. He reports that many of his patients lived from 3 to 20 years after operation. It is significant that many of these died of a relapse later than 5 years, some as late as 15 years after operation. In a personal communication from Persson, he states that in all his cases he used ether narcosis.

spinal anesthesia is the cause of the acidosis observed after surgical interventions performed with those types of anesthesia.

Research workers agree that general anesthesia, by ether or chloroform, produces a great lowering of the alkali reserve, more pronounced in the case of chloroform than in that of ether, and that the return of the acid-base equilibrium to normal is more rapid with ether than with chloroform, being normal forty-eight hours after the operation. The amount of chloroform in the blood during anesthesia is 25 to 35 mgm. in 100 cc., while that of ether is 100 to 110 mgm. per 100 cc. (Cushny). This amount is sufficient to exert the change in the acid-base equilibrium of the body, making a definite shift toward the acid side.

Recent observations, at the Cancer Research Laboratories of the University of Pennsylvania Graduate School of Medicine,¹ show that the average pH of untreated cancer patients is more alkaline than normal and that the degree of alkalinity is closely related to the prognosis of the disease; i.e., the greater the alkalinity, the shorter the term of life. McDonald and Reding have pointed out that the alkalinity is more pronounced in internal cancers than in those involving the skin. Burr Ferguson, who has treated a number of cancer cases by intravenous injections of hydrochloric acid, states that clinical observations have convinced him that an excess alkalinity accompanies cancer.

C. R. Harken² states that it is commonly known that cancerous stomachs generally produce little or no hydrochloric acid and that hypochlorhydria frequently occurs in cachectic patients. The frequent finding of hypochlorhydria in patients with malignant lesions, other than gastric, led him to believe that carcinoma might be a deficiency disease.

According to findings of reputable men, reported in reliable medical journals, we may, therefore, come to the following conclusions:

1.—Ether or chloroform anesthesia produces a lowering of the alkali reserve; i.e. acidosis.

2.—Cancer patients show an increased alkalinity.

Recently various workers (Willy Meyer, C. R. Harken, Burr Ferguson) have reported successful treatment of cases of carcinoma by oral or intravenous acid medication. Thus they supply extrinsically a foreign acid, which must then be absorbed by the cells. When ether or chloroform anesthesia is given, the cells form the acid from within—intrinsically. As the anesthesia permeates the body cells, every cell becomes restored to an acid reaction, a decidedly more thorough acidifying process being thus accomplished than by the extrinsic method. Willy Meyer³, in his re-

cent book on cancer, states: "The medical treatment of cancer should have as its object the change of alkalosis to acidosis."

McDonald⁴, in his recent experiments with marine cellular growths, has demonstrated that mitotic division either stops or is greatly retarded when the pH of the solution outside the cell membrane is made slightly acid. Since ether and chloroform narcosis produces this change of the pH in the human body, in this manner it should stop or retard cell division. McDonald states that cancer is a disease of cell division and, to find a control of this disease, the cancer cells must be restrained from division, even if they are not destroyed, so that they will lose the quality which characterizes them—their power of spreading in the tissues, which depends upon multiplication by division. It appears from the explanation given that ether and chloroform narcosis exerts a definite control over cancer by changing the pH of the blood so that cell division is retarded.

Acidosis has been shown to dehydrate the tissues. Clinical acidosis reduces the hydropic condition of the tissue, thus ending predisposition to cancer; acidosis markedly dehydrates cancer cells in the tumor, in metastases or wherever else they may be lodged and, inasmuch as cancer cells require for their viability a high water content, acidosis, by its desiccating effect, seems to be, almost with certainty, the correct therapy for cancer (Meyer).

Fever therapy has been used in treatment of cancer. Lomer writes: "In my opinion, high temperature of the body (fever) should be considered to be a remedial factor in carcinoma." By producing acidosis, with its accompanying dehydration of tissue, ether and chloroform narcosis has a definite therapeutic value in treating cancer.

Leukocytes are normally acid in reaction. By restoring them to normal in cancer patients, we increase their phagocytic activity. Some investigators believe that the quantity of leukocytes is increased after anesthesia. Thus the greatest and most natural combatant forces of the body are strengthened. That great observer of biological problems, Metchnikoff, stated that the one way to maintain immunity is to increase phagocytosis. It seems natural to assume that this powerful defense of the body should exert some catalytic activity on the cancerous substance.

Theories of Cure

In the light of recent investigations, we have a scientific explanation for the therapeutic effect of ether and chloroform narcosis on cancer. What scientific explanation is there for the therapeutic effect of radium and x-rays on cancer? Let us compare the

commonly accepted theories of the therapeutic action of irradiation by radium and x-rays with the therapeutic action resulting from ether or chloroform narcosis.

According to one theory, irradiation increases the amount of calcium in the blood (it is a recognized fact that a deficiency of calcium accompanies cancer). Ether and chloroform narcosis also increases calcium. Another commonly recognized theory maintains that irradiation causes a certain amount of tissue injury, the result of which is inflammation and an increase in leukocytes. The embryonic cells of cancerous tissue are very susceptible to the phagocytic activity of the new leukocytes. Ether and chloroform narcosis, likewise, acts to increase the quality and quantity of the leukocytes. The third theory is that x-rays and radium cause a shift in pH towards the acid side, which impairs cell division. It has been proved that certain cells are more sensitive to irradiation; cells in the premitotic stage and those undergoing mitotic division are most sensitive, while those undergoing a resting stage are not so sensitive. Ether and chloroform narcosis, by changing the acid-base equilibrium to the acid side, likewise impairs mitotic division. Thus we conclude that the effects of ether and chloroform narcosis check very closely with those of x-rays and radium.

It is commonly believed that there exists in the body some cancer-resisting mechanism. The many spontaneous cures of carcinoma mentioned in the literature may be due to the stimulation of this mechanism, brought about by ether or chloroform narcosis during operation.

Repetition of Narcosis

The question might be raised, if ether and chloroform have a beneficial effect on cancer, why do we not have more cures following operations in which ether or chloroform was used? The answer is as positive as it is simple. As mentioned before, cancer cells undergoing mitosis or in the premitotic stage are most easily destroyed; those in the resting stage are most difficult to destroy. Therefore, repeated inhalations are necessary. For the same reason that we can not expect to destroy cancer by one irradiation, we can not expect to destroy it by one inhalation. Furthermore, it is not to be considered a high-speed panacea for all types of cancer. Again we refer to the findings of the radiologist and the roentgenologist. They maintain, and their findings are conclusive, that there is an enormous difference in the susceptibility of the various new growths to radiation. Basal-cell epitheliomas are very susceptible, as also is keloid. Squamous-cell epitheliomas, are much less susceptible. Benign endotheliomas (moles) are cured with difficulty. Giant-cell

sarcoma is very susceptible—more so than either the spindle-cell or round-cell sarcoma.

The difference in susceptibility seems to be partly one of cytology and morphology. In a mole the cells are mature, differentiated and not undergoing rapid division. In basal-celled epithelioma, the cells are constantly undergoing rapid division and are immature and unspecialized. Such types are always easily influenced by radiation. In a squamous-cell cancer, while the cells are undergoing rapid division, they are less embryonic in type and presumably, for this reason, more resistant. It is the consensus that the effect of radiation on the malignant cell is due to inhibition of cell division.

Cancer a Systemic Disease

By narcosis we are attacking cancer by a logical method and, from a scientific standpoint, perhaps the most logical. Many observers of the past, as well as those of the present, have suggested that the solution of the cancer problem is through the blood stream. They maintain that the local manifestation is but a part of a systemic or constitutional condition, just as various lesions of tuberculosis, gout, syphilis and leprosy are not the disease itself, but are only symptoms. Therefore, it seems unreasonable and futile to attempt to check its progress permanently and cure it by simply attacking its local manifestations as they occur in the body.

Over fifty years ago, Sir James Paget, whose work on the pathology of cancer is still a classic of today, wrote regarding cancer as follows: "I believe it to be constitutional, in the sense of having its origin and chief support in the blood. The existence of this morbid material in the blood, whether in the rudimental or in the effective state, constitutes a general predisposition to cancer." Willy Meyer, in his book on cancer, further states: "Cancer is the joint effect of two simultaneously active chronic irritations, the one systemic, the other local in character. The drawback of the surgical procedure alone, according to our investigation, would seem to lie in the purely symptomatic treatment of the cancer tumor and the neglect of the treating, at the same time, of the systemic disturbance."

It is significant also that many patients live from five to fifteen years after operation and then die of a relapse, indicating that all the cancer or morbid substance in the blood was not removed at the time of operation. Evidently there was some factor that considerably stayed its progress. With our present knowledge of cancer, it does not seem reasonable to assume that, if one part of a cancer is removed, because of that removal another part can remain dormant for so long a time. There must be some additional factor that stays the ravages of this disease.

So, with this idea in mind, we may be justified in attacking cancer by the method this article suggests; i.e., repeated inhalations of ether or chloroform, sufficient to produce complete narcosis, thus producing complete saturation; furthermore, to maintain such narcosis long enough and repeat it often enough to bring about a gradual destruction of the carcinomatous tissue or arrest of its growth. The length of each treatment and the number of treatments to be given, in order that it may bring about a complete control over such a multifarious disease as cancer, is a matter to be determined.

I have had exceptionally favorable results with this method, the outcome being gratifying and sufficiently satisfactory to warrant my passing the suggestion along. I have been able to show a striking and, I may venture to say, scarcely accidental agreement between ether and chloroform anesthesia and post-operative conservation of life.

Of course, we must not fail to recognize that the prognosis in cancer, as in any disease, depends not alone upon the treatment, but also upon the degree of pre-existing cachexia, destruction of tissue and anemia. At any rate there remains to be found a better remedy for cancer than the knife of the surgeon, radium, or x-rays. It is my earnest desire that this report may stimulate scientific investigation along this line, which will result in one step farther in combating cancer.

Summary

1.—The effect of ether and chloroform narcosis on cancer cells is the same as the effect produced by radium and x-rays.

2.—Inasmuch as this is true, why should not ether and chloroform narcosis be recognized as a logical therapeutic agent in the treatment of cancer?

3.—Many spontaneous cures of carcinoma, following operation, may be attributed to the effect of this agent on the body; i.e. by increase in calcium, by the increase in leukocytes and by the changing of alkalosis to acidosis, thus impairing cell division and dehydrating the tissue.

4.—It appears, according to the theory presented in this article, that this control may be made more lasting or permanent if repeated inhalations are administered, and that this method may prove to be more efficacious than treatment by radium or x-rays.

Bibliography

- 1.—Persson, M.: Final Results of Gastric Resection for Cancer. *Ann. Surg.* 86: 321, 1927.
 - 2.—Schere, S.: Influence of Anesthesia on Alkali Reserve. *Prensa Medica Argentina* (Buenos Aires), 20: 1751, Aug. 9, 1933.
 - 3.—Woodward, Schoonover, Frey, Torrance, and McDonald: Alkalosis and Cancer. *J. Lab. and Clin. Med.*, 16: 704, 1931.
 - 4.—Harken, C. R.: Cancer and Hydrochloric Acid. *J. Iowa State Med. Soc.*, 22: 215, 1932.
 - 5.—Meyer, Willy: "Cancer." Paul B. Hoeber, Inc., New York, 1931.
 - 6.—McDonald, Ellice: Cellular Division in Relation to Cancer. *Science*, 69:175-177, Feb. 15, 1929.
- 81 Jefferson St.

PERNICIOUS UNASSIMILATED ALIENS

Only those who have given the subject careful study appreciate the extent to which we, as a nation, during the past three decades especially, have injected into our population literally millions of persons from the old world who hold to theories and doctrines distinctly and emphatically antagonistic to those expressed in the Constitution of the United States. It is but fair to say that while some of these persons were willing to drop their beliefs and standards and accept ours, many of them not only failed, but refused so to do. They have gone forth with ardor worthy of a better cause and formed organizations and movements to wreck our Constitution in order that they may here experiment with their doctrines. They have allied with them many of American birth, who, because of some form of restraint placed upon them by organized society, have been willing to accept any theory, any doctrine, any method, if, in their judgment, it will release them from this restraint. It is to those of this school of thought that, to a very large extent at least, we can trace the burdensome increase in our taxes.—COMMITTEE ON AMERICAN EDUCATION.

HOSPITALS

Unless the hospitals for public patients curb their scientific curiosity and return to the simple practice of Sydenham, their task will be taken from them and given to another. Science, too, is governed by economic law.—SIR ANDREW MACPHAIL, *Montreal, Can.*

Recent Advances in Cardiology

(With a Note on the Trend of Heart Disease During Years of Depression)

By Louis Faugeres Bishop, M.D., Sc.D., F.A.C.P., and
Louis Faugeres Bishop, Jr., M.D., Ph.B., F.A.C.P., New York City

FOR ONE who has had the advantage of following the trend of cardiology for twenty-five or thirty years, to stop to consider the advances of two or three years involves an appraisal of the relative strength of various movements.

I always date the foundation of modern cardiology on a definite footing with the publication of Sir James MacKenzie's great book in 1908. Some of us had followed MacKenzie's work on cardiac rhythm and admired it exceedingly. Up to that time it was a matter that the profession, in the main, ignored. The mechanism of the heart beat, as a basis for the study of irregularities of the pulse and as a key to the underlying organic disease, was not recognized.

Stimulated by the work of MacKenzie, since that time there has grown up a vast store of literature, containing facts more or less well observed and more or less wisely analyzed.

The eternal thirst of the profession for passkeys that will fit all locks, or in other words for criteria of universal application, has led, in some places, to exaggeration of the diagnostic significance of some of the findings of modern cardiologic observations. This was bound to be true in the reversal of the original complete skepticism of the profession at large toward the x-rays, electrocardiograph and even blood pressure studies. Each of these methods has had its rise and decline. Blood pressure studies seem to have reached, at the present time, a stable position. Electrocardiography is still in a condition of flux, but much more advanced toward stabilization than the x-ray study of the heart, which still has much to be determined.

There is always the routine work of the heart specialist—the care of and advice to people with valvular heart disease; careful analysis and ordering of the lives of children with congenital disease; the care of the chronic fibrillators and hypertensive groups; and the observation and guidance of men and women who suffer from disorders of rhythm.

A notable incident in the past two years has been the publication of Sir Thomas Lewis' book on "Diseases of the Heart." This book contains no very striking discovery that has recently been made, but it shows the steady advance of cardiology over a wide front.

Heart Disease in Pregnancy

Heart disease in pregnancy has been considerably helped by the improved technic of

obstetricians. It is now possible to allow certain prospective mothers, suffering from heart disease, to carry the child up to the viable period, because the dangers of childbirth to the heart can, to a large extent, be obviated by the quick cesarian section that is now so popular. The arguments are very strong from many points of view for allowing a woman with even well-marked heart disease to have one child. The arguments against the second child are: greater danger, the risk of depriving the first child of its parent and the fact that repeated pregnancies are fatal to most persons with crippled hearts, particularly mitral stenosis.

It would not be fair to overlook the gradual advance coming from the intensive study of rheumatism and that has a direct bearing on valvular disease.

During the past few years, particularly the past two or three years, there has sprung into prominence the problem of coronary disease. During the past three years, coronary thrombosis and the coordinate conditions in the angina pectoris group have increased by leaps and bounds.

Coronary Disease

That the circulatory system is the most important element in the maturing and, finally, in the destruction of the human body is recognized in the phrase, "the man is as old as his arteries," and it is no new thing to have life threatened by vascular accidents. Every playwright kills his old hero by some such accident; but the plays of twenty-five years ago removed the crabbed old obstructor of young fortunes by a stroke of cerebral apoplexy. The modern playwright always kills the rich old uncle with a sudden and painful heart attack, representing coronary thrombosis or apoplexy of the heart. Indeed it is a fact, provable even by hospital statistics, that the arteries of the heart suffer relatively more than the arteries of the brain, as compared with former times.

The division of coronary episodes according to the site of the thrombosis seems to indicate that when the thrombosis occurs at the mouth of the artery death is instantaneous, and for that reason there is no opportunity to study it clinically.

When thrombosis occurs in the very small arteries there is pain of a milder type and the condition, in a measure, is chronic.

This leaves the intermediate vessels for consideration, and this is the location of the lesion in the typical example of coronary

thrombosis, pursuing the classical course of sudden onset of pain, development of a fever, the pericardial friction rub, fall in blood pressure and all else that goes to make up the typical picture of acute coronary thrombosis.

Angina Pectoris

So much emphasis is now falling on coronary disease, and particularly coronary thrombosis, that it would well pay us to stop here to consider the fact that this does not constitute the whole picture of the clinical entity known as angina pectoris. To be sure, more examples of cardiac pain can fairly be traced to coronary stenosis or thrombosis than was formerly believed. Nevertheless, in many people, chronic aortitis, fatty or fibroid degeneration of the myocardium, chronic valvular disease, adherent pericardium or chronic emphysema of the lungs may be the cause, irrespective of impaired circulation of the heart muscle.

Also, it is possible to believe that the mechanism of pain is sometimes something else than an expression of ischemia of the heart muscle. Certainly, in clinical contact with a person suffering from an attack of angina, we think of the possibility of the distension of an enfeebled heart, or we think of the heart muscle as being in a condition of spasm, the same as a cramp in any other muscle. And we always think of the possibility of a neuralgia of purely neural origin.

One fact is very important in most examples of angina pectoris, and that is that they are an expression of cardiac exhaustion, manifested through a nervous mechanism consisting of a reflex arc. Hence, the fundamental treatment of such conditions must be reconstructive, rather than those which lead to deterioration.

The whole question of reflex action is one of the most complicated that we have to deal with, because it can be both mental and physical. The presence of food in the mouth will cause the secretion of saliva, but the mere sight of food by a hungry person will also cause a secretion of saliva. In one case the reflex merely involves the center exciting the secretion of saliva and the sense organs in the mouth. Reflex from the sight of food must first be started in the optic nerve and then transmitted to the brain to the center of secretion; incidentally this involves sensation. When once the reflex of the second type has been exercised, it occurs much more easily the second time.

Attacks of angina pectoris can be induced by a great variety of circumstances, but the first time it only happens, as we might say, on severe provocation. The next time it occurs from the same cause much more easily, and finally becomes habitual, even when the cause is of very moderate degree. So people subject to attacks of angina learn to avoid

certain things which bring on attacks. These things may be both mental and physical, and the early sense of an impending attack can often be detected and the cause removed.

During the last two or three years a most striking thing has been the emphasis placed upon the occurrence and study of coronary disease. The number of prominent persons who succumbed suddenly to heart disease of this type, as reported by the newspapers, is extraordinary. Discounting the fact that formerly, and also at the present time, the condition has been disguised under the name of "acute indigestion," there still remains the startling fact that this termination of human life has replaced, in a measure, the deaths from apoplexy that were formerly so sudden and frequent.

The analogy between thrombosis of the arteries of the brain and thrombosis of the arteries of the heart, as we pointed out in the *Journal of the American Medical Association* some years ago, is easily appreciated when we look into the matter, but the cause of this change in the final outcome of a tendency to thrombosis is not so easy to make out. Perhaps the men of former times put more brain work into their lives, while the men of these times put more heart work—over-intensity of labor of the more emotional type.

Effects of the Depression

During the past two or three years the manifestations of cardiac defects have been vastly influenced by what, at the moment, we still call the depression. Last spring we had occasion to write a paper for the Medical Section of the New York State Medical Society on "Coronary Disease and Its Relation to the Increase of Cardiac Morbidity." In connection with that we interrogated about 100 life insurance companies, and their testimony as to the increase of cardiac disease during this period was very striking. The Mutual Life Insurance Company of New York furnished us with the following table, which we are giving here as typical, though perhaps more striking than many others that we received.

	1930	1931	1932
Angina Pectoris	63	72	125
Other Diseases of the Heart	234	340	286
Diseases of Arteries (Includes coronary but not cerebral)	112	105	218
Total number of claims—all causes	3,996	4,548	4,904

In conclusion, it is very evident that the many men now devoting themselves to the study and treatment of heart disease are distinctly advancing the art which, in the astonishing increase of the disease, is more and more necessary. The treatment of heart

troubles is on a much better basis than formerly. An increasing optimism has gone hand in hand with a better knowledge of the natural history of heart disease.

121 East 60th St.

Notes from the International Medical Assembly

Reported by George B. Lake, M.D., Chicago

THE 1933 International Medical Assembly of the Interstate Postgraduate Medical Association of North America was held in the commodious municipal auditorium at Cleveland, Ohio, in October, and, as usual, was the outstanding educational meeting of the year. In spite of the adverse economic conditions, the attendance was about 3,500, and all were kept busy from early morning until far into the night.

Among the matters which excited much general interest and were featured in the local newspapers, were the fact, stressed by Prof. John J. Moorhead, of Columbia University, that the steadily rising death and casualty rate due to automobile and airplane accidents, is largely counterbalancing the lowering of death rates from disease; the reminder, by Prof. George P. Muller, of the University of Pennsylvania, that appendicitis is a rival of cancer in our mortality statistics, because it kills over 20,000 young people (average age, 28 years) in this country annually, while cancer attacks the old, whose work is largely done; and the announcement, by Prof. Elliott C. Cutler, of Harvard University, that angina pectoris can be permanently relieved by thyroidectomy.

The Exhibits

The scientific and technical exhibits are always an important part of the educational program of a meeting like this, and the present occasion was no exception, several new features appearing. There was a booth of automobiles and another of motor boats; and, for the first time, contraception was featured at a meeting of national scope, by the booths of the National Committee for Federal Legislation on Birth Control, and of the Holland-Rantos Company, both of which drew much attention.

A somewhat humorous feature of the National Committee's booth was the fact that, next to it, was a showing of a new form of diapers. Many wondered at this juxtaposition of a baby garment and an organization "opposed to babies," and gave the charming and efficient lady in charge of the Committee's booth a chance to impress upon many the fact that the birth controllers are heartily in favor of babies, when they are wanted and born under favorable circumstances.

In the Scientific Section were a number of exhibits which were shown at the A.M.A. meeting last June, such as those on the eastern type of typhus; the capillary circulation of the nailfold; fibroid tumors of the uterus, etc.

Several excellent exhibits of plastic surgery (notably that from the University of Wisconsin, presented by Dr. George V. I. Brown, of Milwaukee, and that of Dr. Claire L. Straith, of Detroit) showed the importance of these procedures in the psychic, as well as the physical, life of such patients.

Dr. Samuel Rabkin, of Cincinnati, showed the history of dental pathology, from prehistoric to modern times.

One interesting chart showed that, while overweight is the cause of 2.66 percent of rejections for life insurance, alcoholic drinking habits account for only 0.28 percent (about one-tenth as many).

In a well-arranged projection room, Mead, Johnson and Co. demonstrated the clinical moving picture films, which they are prepared to furnish for showing before medical groups anywhere. They will be glad to furnish full details to secretaries and chairmen of program committees of medical societies.

In the commercial exhibit, perhaps the most striking showing was that of the Hymanomotor,* an apparatus for restoring the heart's action in cases of apparent death from shock, by means of a double-needle electrode, introduced into the wall of the right auricle through the second right interspace, and carrying a battery current cut down to one millivolt and interrupted to correspond with the heart's normal rhythm.

Another small but interesting new apparatus shown was Coezene, intended to replace menstrual pads and relieve women of many of the discomforts of the catamenial periods. It looks thoroughly practical.

In the booth of the Abbott Laboratories, striking illuminated drawings in full color illustrated some of the effects of vitamin deficiencies, while below them were shown preparations to remedy such defects.

The Mellin's Food Company presented a useful chart showing, not merely the average

*Adlanco X-Ray Corporation.

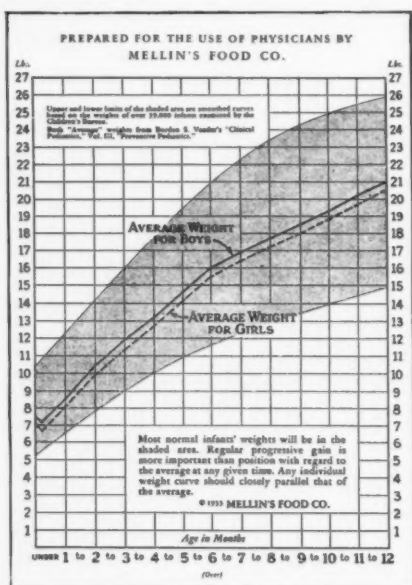


Fig. 1.

weights of children of various ages and heights, but also the maximum and minimum variations falling within the range of "normality" (see Fig. 1). Copies of this chart are available to physicians upon request.

Among the newer remedies presented were Harrower's Endothyrin, a "detoxicated" thyroid extract for the treatment of obesity and other hypothyroid conditions; Mulford's diphtheria toxoid (alum precipitated), one injection of which confers immunity; Squibb's autolyzed liver concentrate, intended to place liver therapy on a more economical and satisfactory basis; phenylmercuric nitrate (J.H.R. Sales Corp.), a new and promising antiseptic; Hynson, Westcott and Dunning's Bromsalizol, a local anesthetic and smooth-muscle antispasmodic; and a number of others.

Here follow abstracts of a number of the papers and clinics presented at the various sessions.

COLITIS

By James H. Means, M.D., Boston, Mass.
Jackson Prof. of Clinical Med., Harvard Univ. Med. School

The business of mucous membranes is to secrete mucus, and a reasonable amount of mucus in the stools is normal. When present in excess, this is due to irritation, and in searching for the cause, the physician must look at the tongue, put his finger in the rectum and use the proctoscope first; and later, if necessary, give a barium meal and

have an x-ray examination. The constant aim should be to make a diagnosis with as little laboratory work as possible, rather than ordering all the patient can pay for—or more.

Case 1 began as acute diarrhea, with watery stools every ten minutes and tenesmus; no vomiting, blood, abdominal pain or fever. The general physical examination was negative. The proctoscope showed six punched-out ulcers in a normal mucous membrane. *Entameba histolytica* was demonstrated. (Amebic dysentery is endemic in Cleveland and may occur anywhere.) Daily hypodermic injections of 1 grain of emetine were given for one week, and the patient now appears to be well.

The treatment of amebic dysentery is medical, using emetine and possibly the arsphenamines. If necessary, surgical measures may be used later. Sometimes the injection of emetine may be used for a therapeutic diagnosis. We must be on the watch for relapses in these cases.

Case 2, a woman of 36 years, has been constipated and had piles since the birth of her first baby. About a year ago she noticed that her stools resembled those of a sheep and that she had intestinal flatulence and distress, with no diarrhea. Varying amounts of blood and pus are present in the stools and the patient has lost ten pounds in weight in a year. The proctoscope showed a mucosa which is rough and coarsely granular throughout, with many minute hemorrhages and bleeding readily when touched.

This is a case of idiopathic ulcerative colitis, the diagnosis being made chiefly by exclusion and by the presence of impaired nutrition with avitaminosis, sometimes resembling beri-beri or pernicious anemia (glossitis). In late chronic cases, the mucosa of the colon may be entirely lost.

The treatment includes the discovery and removal of any foci of infection (which may play a part); a diet low in roughage and protein and high in vitamins; and rest, as in cases of tuberculosis.

If medical treatment causes no improvement, the patient's life may be prolonged and made more bearable (if not very pleasant) by an ileostomy. Charcoal will help in controlling the odor. In intractable chronic cases, with severe focal symptoms and avitaminosis, colectomy may be performed, to save life.

SPINAL TUMORS

By Alfred W. Adson, M.D., Rochester, Minn.
Associate Prof. of Surgery, Mayo Clinic

In subdural tumors of the spine, pain, following the nerves near the site of involvement, and made worse by coughing, sneezing and lying down, is a prominent and sometimes the only symptom. These pains

are frequently interpreted as extra-spinal surgical conditions.

Persistent headache is suggestive of brain tumor (headache, choked discs and vomiting constitute the classic triad of symptoms).

Spinal puncture and the Quackenstedt test, with lipiodol studies, are important in making a diagnosis.

Eighty (80) percent of spinal tumors are operable, when diagnosed; 25 percent are neurofibromas; 25 percent are meningiomas. Operation should be performed before paralysis appears. Intra-medullary tumors can sometimes be improved by operation. X-rays and radium will often take the place of surgery and will sometimes work in inoperable cases.

URINARY TUBERCULOSIS

By Hugh Cabot, M.D., Rochester, Minn.
Professor of Surgery, Mayo Clinic

Tuberculosis of the kidney is practically always bilateral at some stage. In surgical cases it is generally unilateral, the other side having healed. We do not diagnose the early cases, because the typical signs are not found until the lesion breaks through into the kidney pelvis.

This disease is more common in men; but results are better in women, because they do not have complications in the genital organs. The condition is very chronic and genital complications follow the lesions in the urinary organs. It is frequently discovered accidentally, in life insurance examinations.

If unilateral renal tuberculosis can be diagnosed without catheterizing the diseased kidney, this operation should not be done, because of the danger of carrying infection to the well kidney.

If one kidney is sound, the diseased organ, with its ureter, should be removed.

THYROIDECTOMY IN ANGINA PECTORIS

By Elliott C. Cutler, M.D., Boston, Mass.
Mosley Prof. of Surg., Harvard Univ. Med. School

The incidence of angina pectoris has been increasing markedly of late, mainly affecting persons of more than forty years, and the prognosis is decidedly grave. The operation of sympathectomy has done little more than permit these patients to die without pain.

We have long known that the heart is affected in thyrotoxicoses, and that the removal of the abnormal thyroid, in these cases, gives prompt relief from the cardiac symptoms. It seems logical to believe that, if thyroidectomy helps the heart in cases of Graves' disease, the removal of an apparently normal thyroid might help that organ in cases of angina pectoris.

The relation between heart conditions and thyrotoxicosis is not completely measurable in terms of basal metabolism. Subtotal thyroidectomy, on apparently normal thyroids,

may have a highly beneficial effect upon certain heart cases, with little or no effect upon the basal metabolism. There may well be a hitherto-undiscovered cardiotropic hormone in the thyroid.

In seven (7) cases of severe angina pectoris, total thyroidectomy has given prompt and complete relief of the symptoms. The first of these operations was performed only a year ago, so that we cannot yet be sure of the ultimate outcome, but we have reason to believe that this procedure will prolong life and give complete and permanent relief from pain.

This is a very difficult operation, which must be done under a local anesthetic, and should be attempted only by those who have a wide experience in thyroid surgery and the benefit of the close cooperation of a competent cardiologist.

DIAGNOSIS AND TREATMENT OF ANEMIA

By Cyrus W. Sturgis, Ann Arbor, Mich.
Professor of Internal Medicine, Univ. of Mich.

Many classifications of the anemias have been proposed, but the following seems to me to be logical and satisfactory:

- 1.—Pernicious anemia.*
 - A.—Idiopathic.
 - B.—Sprue.
 - C.—Pernicious anemia of pregnancy.
 - D.—Tapeworm (*Dibothriocephalus latus*).
 - E.—Liver disease.
- 2.—Aplastic anemia.
- 3.—Hemolytic anemia.
 - A.—Acute.
 - B.—Chronic.
- 4.—Anemia due to hemorrhage.
 - A.—Acute.
 - B.—Chronic.
- 5.—Myelophthisic anemia. (In leukemia, the red blood cells are crowded out.)
- 6.—Idiopathic hypochromic anemia. (Resembles pernicious anemia, except that the red blood cells are small and the color index low.)
- 7.—Miscellaneous anemias.
 - A.—Nutritional.
 - B.—Endocrine.
 - a.—Addison's disease.
 - b.—Myxedema.
 - C.—Sickle-cell anemia (in negroes only).
 - D.—Non-hemolytic anemia, due to chronic infections.
 - E.—Anemia associated with nephritis.

Treatment

In all macrocytic or pernicious anemia types, give liver, liver extract or ventriculin,

*In all pernicious anemias the red blood cells are large and the color index high. Probably pernicious anemia and tapeworm infestation are coincidental, and not cause and effect.

separately or combined, first in curative and then in maintenance doses.

Do not remove the patient's teeth unless there is a definite connection between the suspected cause and the treatment.

In secondary anemias, find the cause and remove it; then treat with large doses of iron—7½ grains (0.5 Gm.) of reduced iron, with copper, three times a day. As Blaud's pills, this would require 42 a day.

GALL-STONES AND CHOLECYSTITIS

By Frank H. Lahey, M.D., Boston, Mass.

Residual tenderness following gall-stone colic is an important sign. With all gall-stones except those of metabolic origin—cholesterol stones*—there is also cholecystitis.

The value of *cholecystography* is exaggerated. The gall-bladder does not fill in pregnant women nor in the presence of acute ulcer (especially duodenal), pylorospasm or marked colitis. When these conditions are corrected, repeat the test. Do not operate on the basis of x-ray evidence alone; but one may operate on the clinical history and symptoms alone. Give the dye by mouth in all cases. If doubt arises, it may then be given intravenously to those who are free from coronary disease, arteriosclerosis, old age and liver damage, as determined by careful examination.

Gall-stones are dangerous, and the cause of mortality is in the liver (dilatation of the biliary vessels), except in acute cholecystitis with perforation; just as the cause of mortality in prostatic disease is in the kidney.

All gall-stones should be removed at the first attack or upon discovery. None are "silent." Diabetes associated with gall-stones does well if properly treated. When the stones and infection are removed the patients improve.

Stone in the common duct is a frequent finding (10 to 25 percent of all gall-stone cases), and the duct should be opened and a search made in most or all cases. Removal of these common-duct stones reduces the mortality of operation markedly.

ENDOCRINES AND THE HEART

By James H. Means, M.D., Boston, Mass.

When the calorogenic hormones (thyroxin, adrenalin, etc.) are in excess, a heavier load of work is placed upon the heart. The thyroid works slowly (days or weeks); adrenalin promptly (minutes). The former may cause heart attacks or exaggerate existing cardiac symptoms.

The ovarian secretion seems to protect the organism against hypertension; and this protection is lost after the menopause.

Patients suffering from thyrotoxicosis and heart disease may be benefited by total

thyroidectomy. Angina pectoris is sometimes improved by this operation and aggravated by thyroxin and epinephrin.

Thyroid preparations differ materially in strength, and the physician should choose which one he wants to use, familiarize himself with its effects, and then stick to it, as a change to another preparation might upset his results, as he would not know what dose to employ. In order to obtain the same result as that produced by 0.75 mgm. of thyroxin or 1.0 mgm. of thyroxin polypeptide, one must give 3½ grains of Armour's thyroid; 2½ grains of the Parke Davis preparation; or 9½ grains of Burroughs-Wellcome's.

COMPLICATIONS OF PREGNANCY

By William B. Hendry, M.D., Toronto, Can.
Prof. of Obstet. and Gynecol., Univ. of Toronto

Since the advent of insulin, pregnant diabetic women can be handled successfully. All pregnant women should be kept under observation throughout the pregnancy, in order to obtain the best results, and this is especially true if there is any known or suspected complication.

Case 1.—A woman of 22 years had a normal blood pressure early in her pregnancy, but after she was delivered of twins weighing 7 pounds each, she developed postpartum eclampsia, lobar pneumonia and pulmonary edema. The edema was treated with large doses of atropine, followed by epinephrin. Transfusion was attempted, but a severe reaction developed after 5 cc. of blood had been injected, showing that blood typing should be done or repeated just before the transfusion takes place.

Case 2.—A primipara of 19 years had an uneventful pregnancy to the seventh month, when she developed burning on urination and pain and tenderness over the right kidney, with much pus in the urine—a case of pyelitis.

The urine of pregnant women must be examined repeatedly, remembering that obstruction of a ureter may keep back pus from an infected kidney, and that, in pyelitis, there may be pain in the subcostal region (oftener on the right) and fever. In these cases we must drain the pus, by early ureteral catheterization; alkalize the urine with large doses of potassium citrate; and then change the reaction back to acid.

Case 3., the mother of 6 children and suffering with uterine fibroids, had a hemorrhage at the 30th week and another a week later—*placenta previa*. A Porro cesarean section was done (she was entitled to a hysterectomy).

Cesarean section should be performed in all cases of *central placenta previa*. In other types, study the individual case before deciding.

*The appearance called "strawberry gall-bladder" is due to spots of cholesterol in the mucous membrane.

NEPHRITIS IN ADULTS

By Henry A. Christian, M.D., Boston, Mass.
*Hersey Prof. of Theory and Practice of
 Physic, Harvard Univ. Med. School*

All clinicians see cases of nephritis, and all can study them adequately by simple methods, used with intelligence. A good history and the five senses, aided by the stethoscope, the ophthalmoscope (a microscope is vastly helpful, but not essential) and a few simple tests that can be made in any doctor's office, are sufficient.

Richard Bright found out about albuminuria with a teaspoon and a candle, plus a great deal of close, *personal* observation. Today the laboratory workers use a test-tube and a Bunsen burner, and most physicians let someone else do their observing for them. Some of Bright's specimens, *prepared by himself*, in 1827, are still fit for demonstrating pathologic histology.

Every physician should have a stethoscope, an ophthalmoscope and a microscope, and should use them on *every* patient he sees, in order to familiarize himself with normal, as well as abnormal, appearances and sounds. He must see the results of these studies, *himself*. The more elaborate modern laboratory methods may be useful, in certain cases, but are unnecessary.

Fixation of the urinary specific gravity, before and after eating and at other times, at a point between 1.009 and 1.012, shows marked renal damage and is a good test of renal function. After fixation has taken place, one can follow the progress of the case by watching the progressive anemia, through observation of the skin and mucous membranes or by means of hemoglobin estimations with a Tallquist scale *which has not been faded by exposure to bright light*. Blood-chemistry studies are unnecessary.

Later stages of the disease can be followed by the changes in the vascular system, observable by repeated blood pressure readings and the ophthalmoscope.

Acute glomerulo-nephritis is most common between the ages of 20 and 40 years. Early symptoms are puffiness about the eyes, edema of the ankles, albuminuria and a few casts and red blood cells in the urinary sediment. If the red cells increase in the urine, it means that the glomerular structure has suffered more damage. Under proper treatment, patients with acute nephritis can recover completely.

Chronic nephritis may develop insidiously, without obvious symptoms, and be discovered accidentally. Edema may appear in the later stages. We must watch the urine of these patients very carefully and, in the earlier stages, give a high-protein diet, to compensate for the leakage through the kidneys and to combat the anemia. Later, the percentage of protein may be reduced.

Recurring throat infections are very detrimental to nephritic patients.

POSTOPERATIVE COMPLICATIONS

By John F. Erdmann, M.D., New York City
Prof. of Surgery, Columbia University

Preoperative preparation is vastly important, but even when carried out, complications may occur, beginning, perhaps, with the administration of the anesthetic.

After operation, the patient must be moved carefully, protected from drafts, and his position in bed watched and adjusted while he is unconscious.

The urinary output should be carefully and frequently estimated, and if below 10 ounces (300 cc.) in the first 24 hours (no retention being demonstrated by catheterization), a rectal drip of physiologic salt solution in tap water should be started immediately.

Anodynes—morphine, bromides, chloral—should be used sufficiently freely to give the patient complete rest.

Hiccup, vomiting and gastric dilatation may subside spontaneously after nine or ten days; but may often be relieved by gastric lavage. If persistent, the stomach tube should be left in place for several days. The first symptoms of gastric-dilatation are the spitting of a mouthful of watery fluid without effort, or explosive vomiting, and an anxious expression of the patient's face.

Alkalosis is now rarer, due to the introduction of the sodium bicarbonate by the Murphy drip. When it occurs, it should be treated by giving acid phosphates. In acidosis, give abundance of fluids.

If a patient says that he felt a stitch break, examine the wound *carefully, at once*.

Superficial wound infections are easy to see; but hidden infections must be sought with diligence.

Pain in the calf of the leg, coming on six or seven days after operation, points to *phlebitis*. In such cases give acetylsalicylic acid and rest—not heat and massage.

TACT

In the practice of medicine, the physician's judicious employment of tact is as important as the employment of his scientific skill—often it is decidedly more important—and to employ tact it is necessary that the doctor be a student of human nature, both in the aggregate and in the individual.—VICTOR R. SMALL, M.D., in *Medical Economics*, February, 1932.

The Progress of Surgery in 1933

By Clifford U. Collins, M.D., F.A.C.S., Peoria, Ill.

THE progress of surgery does not proceed by sudden leaps and bounds, but is almost imperceptible. Some new thought or method of technic is placed before the surgeons for their trial and judgment, but it takes several months and, probably, a few years for them to test the new idea or method and render the report of their judgment. If their report is favorable, there has been definite advance, but if it is unfavorable, there has been no forward progress. However, the *trend* of surgical thought and action during a single year may be portrayed, and that is what I shall endeavor to do.

The discussion as to the advantages and disadvantages of **spinal puncture** in fractures of the skull still goes on, and the question has not been settled. It is strange that most of the specialists in brain surgery are opposed to spinal punctures, while the general surgeons claim that they are a valuable aid in the diagnosis and treatment of the injury to the brain in skull fractures.

Fractures of the skull are emergencies, and it would be fair to assume that general surgeons probably see more of them than do the specialists in brain surgery. While the pressure on the brain may be diagnosed by certain symptoms, those who favor spinal punctures claim that the presence and degree of abnormal cerebrospinal fluid pressure may be accurately ascertained by the spinal manometer, which is an instrument of precision. After an abnormally high cerebrospinal fluid pressure has been accurately diagnosed, the pressure may be reduced by withdrawal of the spinal fluid by spinal punctures, or by the other well known methods, as the surgical attendant deems best.

No particular progress has been made in surgery of the **thyroid gland** in the past year. The preparation of the patient by the administering of Lugol's solution has lowered the mortality in hyperthyroidism so much that the removal of the major portion of the thyroid gland has become a relatively safe operation, that any good general surgeon can perform.

The thought has been suggested in the past year that partial removal of the thyroid gland would be a good treatment for a weak, failing heart. A few cases have been reported, but the idea is not generally accepted.

Bone cysts are now thought to be caused by an abnormal condition of a parathyroid gland—frequently an enlargement or a tumor. The enlarged parathyroid can not be detected before operation, but can usually be found if searched for thoroughly.

Great progress has been made in **surgery**

of the lungs. Only a few years ago the surgery of the lung was practically limited to the drainage of lung abscesses. In the past year, the removal of lobes of the lung for carcinoma has been reported, and recently the successful removal of an entire lung was recorded. For the present, it is work that had better be left in the care of the specialists in lung surgery.

In empyema of the pleural cavity, the pendulum is swinging back to free drainage, with resection of a rib. The important point is to be sure that the pleural cavity contains frank pus.

For several years an argument has been going on between the surgeons of this country and those of Germany and Austria, about the relative merits of gastro-enterostomy and a large resection of the stomach, in **gastric and duodenal ulcer.** This argument was practically settled in the past year by the comparison of notes, and the discovery that, on the continent, the patients usually have multiple ulcers of the stomach, which makes the larger resection more desirable, while in this country the patients usually have single ulcers, in which a lesser operation is usually satisfactory.

For a good many years it has been the opinion of surgeons that an acutely inflamed **gall-bladder** should be let alone until the acute symptoms have subsided and the patient is in better condition to stand the operative procedure which should then be performed. In the past year several articles have appeared advocating the removal of the gall-bladder as soon as the diagnosis is made, as is done in appendicitis. The claim is made that some of the patients with acute cholecystitis will die if let alone, who might be saved by prompt surgery. This question has not been definitely settled.

Acute obstruction of the bowels has too high a mortality. Earlier diagnosis is still urged. The attending physicians should not wait for the symptoms of late obstruction, any more than they should wait for the signs of late cancer.

More than one paper has been presented in the past year advocating the use of a stomach tube (passed into the duodenum if possible), combined with a suction apparatus. The suction draws up the intestinal contents and gas from above the obstruction and relieves the distended bowel. Some times, when this is done, the obstruction becomes spontaneously relieved and, in any event, the patient is put in much better condition for any necessary operative procedure. The suction apparatus is simple and can be easily

arranged with some bottles and rubber tubing.

The controversy is still going on regarding the relative merits of enterostomy. It may have a useful place if there is still peristalsis, but it is not the panacea that it was thought to be at first.

A few years ago it was thought best to do a permanent colostomy with resection, in malignant conditions of the left **colon and rectum**. In the past year there have been a number of articles presenting methods of resection and an effort to avoid the permanent colostomy. The discussion is not finished. Where possible, the Mikulicz operation is probably safer in the hands of the general surgeon. The patient may be in the hospital longer, but he leaves the institution walking and without assistance.

The methods for implanting the ureter into the colon are becoming more simple. The latest is to unite the ureter to the colon with a stout, tightly-tied ligature through the wall of each structure and let the ligature cut its way through. After this is accomplished and the anastomosis is completed, the ureter can be separated from the bladder and closed just below the anastomosis. The operation can be done quickly and both ureters may be operated on at the same time.

A most important change in technic has occurred in the treatment of the **enlarged prostate gland**. It is now partially removed by taking out small pieces through the urethra, by means of an electrical instrument called the resectoscope. The same care should be used in the proper preparation of the patient, as regards kidney function, as is taken when the prostate is to be entirely removed. This method was brought to the attention of surgeons about five years ago, and has stood the test of time and experience of others very well. The principal dangers are hemorrhage and infection but, carefully done, this method produces excellent results. It takes the surgical treatment of the enlarged prostate gland out of the hands of the general surgeon, and puts it under the care of the genito-urinary specialist, who can use a cystoscope, which, perhaps, is just as well.

In the treatment of **fractures**, skeletal traction, with pins through the bones, is becoming more popular. Open operations, with internal splinting, are not so popular as they were a few years ago. In fractures of the upper end of the femur, the use of the sound lower extremity as a splint, with skeletal traction in the fractured limb, is meeting with favor.

More and more work is being done on the **sympathetic nerves**. It is now generally ac-

cepted that section of the sympathetic nerves is the best treatment for megacolon. It is also being done for some bladder conditions.

The progress in **anesthesia** goes steadily on. Spinal anesthesia is still favored by many, but its use is necessarily limited to the lower half of the body. Several new local anesthetics have been brought to the attention of surgeons and are being tried. The effort to find a local anesthetic that will have as powerful an effect on the mucous membrane as cocaine, without the danger, will probably be successful in the near future, if it has not already been accomplished. Intratracheal anesthesia is being used more, particularly in chest operations. The apparatus for administering intratracheal anesthesia is much more simple and less expensive than it was a few years ago. Ether still holds the first place in the general anesthetics for ordinary use, but there is an increasing tendency to use hypnotics as a preliminary to all anesthetics. They add much to the comfort of the patient.

There is an increasing use of **transverse incisions** for abdominal work. They are also being used for bladder operations and bilateral hernias, as well as for pelvic operations. A recent article described a perfected technic of the transverse incision for gall-bladder and stomach procedures. The transverse incisions are closed much more easily, but the surgeon must be sure of his diagnosis and the location of the pathologic anatomy before such incisions are used.

Giving Fluids Parenterally

It has been known for a long time that fluids are very necessary in the postoperative care of a patient. At first the attempt was made to give the fluids by mouth, but the stomach did not absorb them, and very often they were rejected. Then the fluids were given by proctoclysis, but this was not altogether satisfactory, because they were ejected and it was difficult to tell just how much of the fluids were absorbed by the patient. There is an increasing tendency to administer the fluids, postoperatively, by hypodermoclysis or intravenously. By these methods the surgeon knows that the patient is receiving the amount of fluids he needs. The increasing use of dextrose to nourish and sustain the patient has made more popular the administration of fluids subcutaneously or intravenously. The addition of a small amount of procaine to isotonic saline solution, as suggested by a prominent surgeon a few years ago, relieves the patient of much of the discomfort of hypodermoclysis.

427 Jefferson Bldg.

Tularemia Treated By Transfusion From a Convalescent*

(A Case Report)

By R. Alexander Bate, M.D., Louisville, Ky.

MR. W., (Caucasian), age 25 years, married, a railroad repair employee, athletic blond, over six feet tall, normal weight over two hundred pounds, gave a history of hunting for the week of November 19 to 26, 1932. The rabbits killed were dressed and eaten. No evidence of illness followed until he had an apparent attack of "influenza" in the first week of January, 1933. Christmas week is reported as being without either known tularemia exposure or feeling of other than health.

When the doctor in charge of the case observed the typhoid state into which the patient lapsed as the "influenzal" syndrome passed, he found the Widal and all other blood verification tests for typhoid negative. Several consultants caused undulant fever and tularemia tests to be made. The day upon which I saw the case in consultation (February 1), about the beginning of the fourth week of the subject's fever, Dr. Allen, of the Louisville Research Laboratory, returned the report of a positive diagnosis of tularemia.

Examination disclosed a well-nourished, robust subject, in a typhoid mental state, but capable of being aroused to answer normally. The temperature was ranging as high as 105° F.; pulse, 110; respiration 32.

The skin was somewhat spotted and there were some incrustations over the buttocks. Macules about the face were of no recognized significance, neither were there any rose spots of typhoid nor right iliac typhoid gurgle or pain. Formed fecal substance was present in the bowel movements.

The spleen was found sufficiently enlarged to be palpable, as well as uniformly increased in area of dullness. The liver area of dullness was increased uniformly and some tenderness was elicited.

The lungs gave a fairly clear note of resonance, but large and small mucous rales were very marked over the entire region of the lungs, which were observed anteriorly, below the axillae and posteriorly, from the apices to the bases of both lungs; no apparent accentuation in any area existed. The uniformity of the rhonchi, and the universality of the regions over which they could be heard, differed from any clinical observation of forty-one years. Vocal fremitus was increased. Large masses of glairy mucous, blood clots and purulent material were being expelled

from the respiratory tract, but no pneumonic "prune juice," nor anatomic sign of pneumonia was observed.

The kidney secretion was not observed to be other than is usual in continued fevers of this degree.

The eyes, neither palpebrae nor vision, showed any change.

Neither the superficial glandular system, nor digits showed any tularemic markings.

The incrustations on the buttocks were thought to have appeared after the heavy patient became weak and confined to bed. Certainly this was the only spot that could have originated as a papule, which often marks the site where tularemic infection has passed through the unbroken skin of animals.

Thus the diagnosis became, beyond question, tularemia of typhoid type, since no oculo-glandular, ulcero-glandular, nor glandular changes were observable. However, the lungs, liver and spleen changes must, undoubtedly, have been characterized by glandular hyperplasia. Certainly there were definite changes in the liver and spleen, and much more marked changes in the lungs than occur in other continued fevers.

There was a distinct odor of infection about the patient.

Treatment

The patient was put upon epinephrin in five-drop doses about every 4 hours; a capsule, each containing 1/60 grain (1 mgm.) of podophylin; 2/15 grain (8 mgm.) each of menthol, thymol and calomel; and two grains (0.13 Gm.) each of guaiacol carbonate and trypsin, which was repeated about every 3 hours (when the patient was awake); and an ounce (30 cc.) of whiskey, in hot water or milk, was given every four hours, together with other hot liquids. The same medicine was continued for a week.

By night of the following day, a suitable blood donor—a tularemic convalescent of a year—was found. Dr. John T. Bate and Dr. R. A. Bate, Jr., performed the transfusion.

There was no change in the symptoms by crisis after the transfusion, but improvement was gradual and by the end of the week the patient's morning temperature had been normal for several days and his strength, appetite and sleep were steadily improving. A hematonic and a tonic were supplied and the capsules withdrawn. Dr. Hicks reports an uneventful recovery.

The cases of tularemia coming under my observation have been seen in consultation,

*Presented before the Louisville Society of Medicine, March 2, 1933.

and none of them were seen until after the third week or later. Those seen were very ill and all died of pneumonia.

The agglutinating power of the blood of all tularemic convalescents and the fact that no second attack has so far been observed in any subject, suggest that, not only immunity, but curative power, resides in the blood of convalescents; this caused the suggestion of transfusion as early as 1927; but so far as I know, this is the first case reported which was so treated.*

Dr. J. M. Blades, of Butler, Ky., read before the Licking Valley Medical Society, June 11, 1931, a paper, "Tularemia," which appears

in the June issue (Vol. 30, No. 6) of the *Kentucky Medical Journal*, which is not equaled in interest by any of the more extensive current publications with which I am familiar.

I shall be glad to see this disease lifted, by its clinical symptoms, to a syndromic portrayal, where blood evidence will be used to confirm and not, as now, to make the diagnosis. The tularemic convalescent's blood, or equivalent serums yet to be produced, may then be used in all cases of tularemia in the first week of the disease or before the blood gives its diagnostic agglutinating reaction.

416 Brown Bldg.

The Relief of Pain with Dilaudid

By Edward Morrish, M.D., St. Louis, Mo.

ABOUT a year and a half ago my attention first was drawn to a newer morphine derivative, dihydromorphinone hydrochloride, known as Dilaudid. Some months later my interest was stimulated further by the reports of the successful use of this drug by Leyton¹, of London, Alvarez², of the Mayo Clinic³, and later that of Menard⁴, of the Lahey Clinic, Boston. About this time I had an opportunity to use and study Dilaudid.

Since clinical effectiveness is the ultimate criterion of any drug, Dilaudid had to be used in the various fields where narcotics, such as opium, morphine, codein, heroin and others, were indicated, the determining factors being analgesia, hypnosis and narcosis, minus the distressing symptoms. This report is offered to show the results of the investigation of the analgesic action of Dilaudid.

The points which must be considered in favoring one opiate over another are the following:

- 1.—Minimum dose to control pain.
- 2.—Rapidity, strength and duration of action.
- 3.—Absence of disagreeable side phases.
- 4.—Lack of body tolerance.
- 5.—Euphoric action absent or slight.
- 6.—Habit-forming properties or addiction absent or only slight.
- 7.—Absence of constipating effect.

Of these points, the relief of pain and rapidity and duration of action can be determined at once, while constipation, gastric tolerance and euphoric manifestations can be evaluated only after considerable application and careful observation, and body tolerance and habituation will require a long time and prolonged use.

*"General Medicine" (*Practical Medicine Series*) for 1928 and 1929 give excellent discussions of tularemia.

†See here also the later report by Eddy, in *J.A.M.A.* 100: 1032-1035, April 1, 1933.

Analgesia

In giving Dilaudid, my first thought was to determine its value to relieve pain. With this in mind, it was given to patients requiring morphine or other narcotics and to patients in whom it was imperative that their pains be relieved. That doses of this drug, as small as 1/32 or 1/24 grain (2 or 2.6 mgm.), were effective became manifest at once.

Dilaudid compared, favorably with morphine in its analgesic effects. The duration of the effect was about the same in both drugs, but the effect from the former set in more rapidly.

At no time did I encounter constipation directly traceable to the drug. Absence of the distressing side phases was repeatedly noticed with patients who were nauseated or discomforted by morphine and other opiates. Euphoria, when encountered during Dilaudid medication, assumed more the state of well-being and gratefulness for the ease given, rather than the dreamy, speculative morphinized condition.

At this time I cannot commit myself on habit formation or addiction, as I have not used it a sufficient length of time. It is noticeable that the drug apparently does not satisfy the cravings of the morphine addict of long-standing, nor have I had anyone ask for it except to ease his suffering.

It is interesting and worthy of note that I have not seen tolerance to Dilaudid develop. When I find it necessary to increase the dose, during the progress of a disease such as cancer, it was my observation that the increase was required because of the more intense pain in the progress of the disease. In justice to these statements, I should like to make mention here of some of my observations in actual practice.

Case Reports

In an inoperable case of cancer of the left breast, involving the lymphatics of the axilla,

it became necessary, during a period of sixteen months, to administer opiates. The smaller doses of morphine sulphate were soon found to be inadequate and a dose of $\frac{1}{4}$ grain (16 mgm.) was required to establish any degree of comfort. Shortly following this medication nausea developed, adding its burden to the distress of the patient. Here a dose of $\frac{1}{2}$ grain (32 mgm.) of codein sulphate was given, hoping to relieve the patient of the added distress of nausea; this was only partially successful. Not until the patient was given Dilaudid orally, in doses of $\frac{1}{24}$ grain (2.6 mgm.), in aqueous solution, was she fully relieved. The action of the drug was prompt, nausea was overcome and the patient took a more wholesome attitude toward her condition.

During the fourteenth and fifteenth month the pain had increased in severity and it was necessary to increase the dose to $\frac{1}{16}$ grain (4 mgm.). This served well until the last few days, when the pain became so intense that $\frac{1}{12}$ grain (5.2 mgm.) of Dilaudid, every two to four hours, was required to give the usual comfort the patient had experienced before, the necessary increase of dose being comparable to the increased pain. The prompt action following oral administration and the quick cessation of the fiendish tortures experienced by this patient, is a point of superior importance. I dislike to think what this patient might have had to endure without the drug.

A case illustrating the rapidity of the action of Dilaudid was that of a man aged twenty-six, suffering from severe attacks of spastic pain, extending from the lumbar region to the groin and diagnosed as renal colic. The hypodermic injection of $\frac{1}{20}$ grain (3 mgm.) of Dilaudid was followed by a second injection in fifteen minutes, following which time the excruciating pain readily subsided. The patient was seen the next day and stated that he had no further pain during the night, although he did not sleep so well as he had expected one should after morphine. There was a total absence of nausea or "hang-over" drowsiness.

A third interesting case is that of J.B., aged 35, who gave a history of syphilis that had been growing progressively worse. Paralysis of the left arm and left leg occurred about six years ago.

In January, 1933, the patient complained of girdle pains, with lightning-like neuralgic attacks, extending down the limbs, and severe gastralgia. In this case of a typical tabes it was decided to use Dilaudid in aqueous solution, $\frac{1}{24}$ grain (2.6 mgm.) to a dram, during the gastric crisis. He was given one dram every three hours until the pain subsided. After the cessation of the crisis, which lasted about forty-eight hours, the solution was continued for a week, every three or

four hours, and then one dram three times a day for another three days.

It was observed that there was very little nausea and no constipation. After the discontinuance of the drug no craving or hunger for it was shown.

Eight weeks later the patient suffered a further attack of the same condition. He was given a like solution, using two teaspoonfuls for the first dose, which relieved the pain, and following this with one dram every four hours. After seven doses the crisis had passed. Again no craving for the drug was observed; the patient voluntarily discontinued the medicine after relief had been obtained. No nausea, no constipation, no euphoria were noticed.

In May, 1933, a third attack, although not so severe as the first or the second one, occurred and was again quickly relieved by three doses of one dram each, containing $\frac{1}{24}$ grain of Dilaudid.

To judge from this case, it is possible, by using Dilaudid, to avoid fear of addiction, which generally has caused great reluctance in the use of morphine in such cases; for the patient, although he at all times had the drug in his possession, employed it only when the necessity first arose during the crisis and discontinued it of his own accord when the attacks were ended.

It is well known that severe cough, resulting from influenza and deep-seated chest colds, is often as difficult to deal with as severe pain, so it will not be amiss to state that I have found that Dilaudid will advantageously replace morphine for the control of paroxysmal or obstinate cough. Observation of these conditions does not reveal inhibition of normal secretion, in doses from $\frac{1}{96}$ to $\frac{1}{32}$ grain (0.75 to 2 mgm.), but the dose, of course, must be dependent upon the degree of irritation.

Conclusions

To the general practitioner and specialist who is treating a number of pathologic conditions productive of great pain, Dilaudid offers effective therapy. It might be termed a refined treatment, because of the marked diminution of latent nerve and motor disturbances, such as drowsiness, nausea, constipation and euphoria. Therein it establishes its refinement in the accomplishment of the purpose for which narcotics are used, markedly reducing the untoward symptoms for which other narcotics are known.

References

- 1.—Leyton, O.: Dihydromorphinone Hydrochloride (Dilaudid). *The Lancet* 1: 835-836, April 16, 1932.
- 2.—Alvarez, W. C.: Dihydromorphinone Hydrochloride (Dilaudid, Bilhuber-Knoll): A Powerful Analgesic with Some Advantages over Morphine. *Proc. Staff Meet. Mayo Clinic* 7: 480-483, Aug. 17, 1932.
- 3.—Menard, O. J.: Dilaudid for Intractable Pain. *Surg. Clin. North Am.* 13: 727, June, 1933.

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PHYSICAL THERAPY AND RADIOLOGY

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Electrodiagnosis

ALTHOUGH Pflüger, a German physiologist, wrote "The Physiology of Electrotonus" in 1859, the real foundation for scientific electrodiagnosis and electrotherapy was laid down through the numerous experiments and accurate observations of his contemporary, Du Bois-Reymond, one of Germany's greatest scientists. Despite the many subsequent years of research and clinical experience by internationally recognized authorities in Germany, France and England, electrodiagnosis is still far from being accorded, in this country, that popular recognition which such an unflinching and precise diagnostic procedure merits.

We were recently called upon as an expert and impartial witness, by the State Commissioner of Labor, to determine whether the discharged employee of a factory was a malingerer or really suffering from a disabling and irreparable traumatism. A first-class hospital, equipped with a physical therapy department, is closely associated with this factory, one of the largest of its kind in the country. Nevertheless, neither the surgeons nor the lawyers for the defendant firm had given any previous thought or credence to the possibility of definitely diagnosing neuromuscular lesions by means of scientifically established electrical methods.

To qualify as an expert in electrodiagnosis does not necessitate surgical ability, but does require a thorough knowledge of anatomy; a somewhat extended experience in neurology; and familiarity with the intricately varying factors so delicately affecting the technic of electrical applications and the respective neuromuscular responses thereto. To make an electrodiagnostic examination competently requires the routine employment of both the

interrupted constant or galvanic current and the faradic. A normal motor nerve reacts when stimulated by the sudden make and break, or change in intensity of the direct current; or any similarly abrupt interruption of the faradic current. Normal muscle responds, through its more sensitive motor nerve fibers, to the interruptions of the faradic current, whose fleeting duration maximally recurs 100 times per second. A muscle with impaired nerve innervation is unable to respond to the more evanescent impulses of the faradic, but will more or less sluggishly (degeneratingly) react to the negative make or closure of the direct current, which has an estimated duration of about one-half second. Due to the more gradual rise in intensity of the sinusoidal currents they cannot be satisfactorily substituted for the abrupt impulses of the faradic, when testing nerve reaction.

The abstruse and bewildering formulas devised for meticulously estimating the diagnostic and prognostic value of cathodal closure and opening; anodal opening and closure; and their possible reversals or sequences, may be satisfactorily dispensed with in favor of a simplified but eminently practical technic. The negatively charged button electrode is suddenly contacted to the normal motor points; noting the increased amount of current required to elicit an impaired or sluggish contraction, when applied over the abnormal or unhealthy motor points of the corresponding side, provides reliable data as to the character and severity of the lesion under investigation.

Cumberbatch, in his editorial preface to "Electro-Diagnosis in War," (Zimmern & Perol, University of London Press, Ltd., London, 1918) writes: "One of the great advan-

tages of electrical testing is that it affords definite and indisputable objective signs in which the personal element of the patient plays no part." Every case of paralysis and every disability in which there may be doubt as to the extent of neuromuscular impairment should receive an electrodiagnostic examination. In certain medicolegal cases, omission

to take an x-ray picture is conclusive evidence of lack of proper attention upon the part of the attending physician; similarly, the time will come when the omission of an electrodiagnostic examination, in certain cases, will be construed as *prima facie* admission of incompetence of the defendant physician.

J.E.G.W.

Human Radiant Energy

By Frank Thomas Woodbury, A.B., M.D., New York City

BEFORE Dr. Albert Abrams gave evidence of the disordered mentality which was a symptom of the disease which caused his death, he made some original investigations, upon which he based some conclusions concerning the electrical and electromagnetic properties of the body in health and disease, their detection by electrical instruments of his own devising and their cure by electromagnetic radiation. These became known later as the Electronic Reactions of Abrams.

Unfortunately his initial ideas have been lost sight of and discredited by the flood of derisive criticism which his later psychopathic utterances let loose upon him. In the light of recent developments, a rehearsal of some of his original ideas may be of interest.

His first proposition, that the body radiates electromagnetic energy, is now an established fact. Infra-red radiation is one of the methods of cooling the body, along with conduction and the evaporation of sweat.

Other organs and body fluids also radiate energy¹ some of it in the visible wavelengths. Lakhovsky² maintains that living cells emit and absorb radiant energy, which he thinks is the basis of all biologic phenomena. He goes to the extent of incriminating the cosmic rays, discovered by Millikan, as the source of disharmonious oscillations in the cells of the body, and therefore a cause of disease.

In this idea he is seconded by Professor Paul Kunze, of Rostock, in an article published in "Research and Progress." The cosmic rays, which possess electric energy amounting to hundreds of millions of volts and travelling at a speed only five and one-half meters less per second than light, he believes penetrate the body and leave traces of their passage in the nature of destroyed cells. He believes that progressive destruction of that sort constitutes advancing age. He also believes that, in some cases, decreasing vitality or the destruction of some important cells is due to the same cause.

The body is said to have an aura. We recall the nimbus and halo depicted by artists; and Kilner³ has written a book about it. Some

of these radiations are capable of killing yeast cells and wilting flowers, according to Rahn,⁴ who is professor of bacteriology at Cornell University. They are given off from the eye (reminding us of the "evil eye" belief of the Italians), the nose and the finger tips, as well as from the whole body and from the saliva. The wavelengths are not stated.

Now comes Dr. George W. Crile, of anoci-association fame, to add his testimony. He is reported to have said, "The life rays have a range from ultraviolet wavelengths, through visible into infra-red. These rays are generated and emitted during life and change the state of activity of protoplasm. . . . The short waves have the power to modify atoms and to build up organic compounds; that is, the power to create protoplasm or living matter."⁵

Gurwitsch, of Leningrad, declares⁶ that he discovered that the blood, as well as the nerves, brain and other organs of the body, emanate specific types of rays, generally known among scientists as mitogenic rays, life rays or M rays, which lie in the ultraviolet portion of the spectrum. They are given off from plants, yeasts and similar living organic entities. All organs of the body, he finds, have their own specific biologic spectrums.

He says that normal blood has a spectrum with a band from wavelength 190 millimicrons to 205 millimicrons ($m\mu$),[†] another extending from 215 $m\mu$ to 225 $m\mu$, and a line at wavelength 217.5 $m\mu$.

To this may be added his earlier discovery, which was corroborated after a most critical examination and repetition by Reiter and Gabor,⁷ that radiations of wavelength 340 $m\mu$

^{*}Note: That cellular function is chemical and that chemical reactions are electrical in nature, with the by-product of heat, is well known. See Crile, G. W.; "A Bipolar Theory of Living Processes." The Macmillan Co., N. Y. 1926; and "Electrical Phenomena in the Living Cell," by Winthrop J. V. Osterhout, member of the Rockefeller Institute for Medical Research, in the Harvey Lectures, delivered under the auspices of the Harvey Society of New York, 1929-1930, under the patronage of the New York Academy of Medicine. Series XXV. Williams & Wilkins Company, Baltimore, 1931.

[†]A micron (μ) is the one millionth part of a meter; and a millimicron ($m\mu$) is the one thousandth part of a micron.

are given off from rapidly multiplying cells, such as the growing tips of onion roots, pollywogs' brains and rapidly growing malignant cancers.

We are all familiar with the visible radiation from fireflies and glow-worms and from marine organisms like the *noctiluca*, some jellyfish and deep sea fishes. Some enzymes and hormones radiate energy.

Abrams' second contention was that disordered function characteristically altered the radiation emitted, so that this could be used as a method of diagnosis. By means of a special instrument, which he devised for the purpose, he claimed to be able to "tune in" on this altered radiation and detect the character of the disease causing it, particularly in its incipency, before grosser laboratory tests and methods of examination could elicit traces.

Dr. Crile is reported to have said, "The medical man of the future will 'tune in' on the living body as one does now on the ordinary radio. By 'listening in' to the short waves transmitted by the various organs, he will hear the symphony played by the living organism and will determine the rhythms of the 'dance of life.' . . . 'Long before there is any outward evidence of disease, the physician-radio-engineer of the future will thus be enabled to tell by the 'reception' of the 'life waves' whether they are playing a melody of health or signalling an S.O.S."

Gurwitsch also states¹⁰ that, as soon as cancer begins to develop, the normal spectrum of the blood, as mentioned above, changes. This change he considers a health signal to the examining physician.

Dr. Dmitry N. Borodin, a Russian research worker in New York, is quoted¹¹ as saying that, so far, twenty-three biologic spectrums have been mapped out by Gurwitsch, himself and various other European investigators. These include two specific spectrums for cancer.

"It is quite interesting," said Dr. Borodin, "that spectrums of cancer tissue are not identical during different stages of the disease. The cancer tissues with Ringer's solution and glucose have a wavelength of 190 to 200 $m\mu$, and another band at 217 to 223 $m\mu$, belonging to the glucolytic type. The necrotic and peptic decompositions of the cancerous area have a wavelength of 196 to 212 $m\mu$, with another band, 219 to 244 $m\mu$, and belong to the proteolytic type of spectrum." (We recall that it was Abrams who claimed to make a diagnosis of cancer from a drop of blood.) Crile adds, "These radiations are increased during malignant processes."

Crile is reported to have said, further,¹² "Short waves are vital to life. When the short waves of an organ are reduced, the vitality of that organ is reduced, and when they reach zero the organ dies. Disease reduces short-

wave radiation, as does also a general anesthetic; hence when an organ is diseased, anesthesia may reduce the short wave of that organ to zero and the patient dies because that organ does not function any longer.

In an old person the electrical potential of all the organs is reduced and the radiations are depressed. In such people, one or another vital organ may have the lowest potential and the function of that organ fails first. We then say that the patient died of the failure of the liver, the kidney, the heart or the brain. In reality he dies of the anesthetic."

Abrams' third contention was that cells absorb radiant energy which reaches them and that some frequencies might have the specific power to alter these frequencies of disease. He conceived of the abnormal radiation as being damped down, to be replaced by a healthy frequency. If his conception was faulty, at least the facts are on his side. Radiant energy, from gamma rays to short-wave radio, is now applied for specific effects, according to the part of the electromagnetic spectrum employed, the tissues to be treated and the results desired. A good deal of it, it must be admitted, is still upon an empiric basis. Cancer, tuberculosis, rickets, infectious inflammations, blood diseases, endocrine dysfunctions, ulcers, wounds and burns, sexual disorders, skin diseases, etc. are treated by electromagnetic energy. We attribute the remedial effects to chemical or thermal energy, generated in the cells absorbing the radiation.

It was Lakhovsky¹³ who first employed short-wave electromagnetic energy, of two-meter wavelength, to kill experimental tumors in plants. He now advocates the same for human malignant growths.¹⁴

Schereschewsky and Andervont¹⁵ employed short-wave radio for the treatment of experimental sarcoma (Rous strain), at Harvard, in mice and chickens.

Schliephake¹⁶ refers to the specific selectivity of certain tissues and fluids of the body for wavelengths under four meters in length. This was noted by Whitney, of the General Electric Co., in the laboratories of the company at Schenectady, as the effect of waves of 30 meters upon varying strengths of salt solution.

Abrams invented an instrument which he called the oscilloclast, supposed to generate electromagnetic energy between 7 and 8 meters wavelength and with a very minute current of 7 to 8 microamperes, which may be varied at the will of the operator for treatment purposes. Some¹⁷ still believe that it has therapeutic virtues. However that may be, Dr. Abrams was already failing mentally at the time and the most fantastic claims and ideas were promulgated by him and by those

who used his machine, which could not be verified by many.

The blue-violet and orange-red areas seem to be antagonistic electrically and chemically, according to the investigations of Dr. Walter Finkler and Dr. Gabriel Rabel, of Germany; and Dr. H. Ehrenwald found that they had physiologic effects, as follows: In the Vienna Psychiatro-Neurologic Clinic, he blindfolded a few subjects in a dark room and had them hold out their arms. When a beam of white light was applied to the throat and cheek, no effects were noted; but when a red screen was interposed, without their knowing it, the subjects moved their arms toward the source of radiation; and when a blue-violet screen was used, they moved their arms away from it. Many other distinct effects were noted on chemical solutions and films and on germinating seeds and growing plants.

To avoid the untoward effects of cosmic waves supposed to cause disease, Lakhovsky makes patients wear an open-circuit resonator, in the form of a rubber-insulated ring, bracelet, collar or belt. The wire is one square millimeter in cross section and the open ends one millimeter apart.

Dr. Raymond Dodge, professor of psychology at Yale University and a member of the Institute of Human Relations, gives a method for the control of cancerous growth, based on the knowledge of the electrical currents present in all living tissue." He says, "An appropriate electrical exploration of the cancerous regions should enable the experimenter to determine the margins of the growth and hyper-metabolic activity, by the points at which the negative current of action ceases."

A fair, unbiased consideration of these assembled data must lead us either to throw the whole matter out of court as unestablished, with the implied discrediting of the witnesses, or to examine with closer attention the fundamentals which bind all these together, that some rational and systematized method of diagnosis and treatment may be evolved. There is much food for serious thought and investigation.

References

- 1.—Aldrich, A. B.: A Study of Body Radiation. *Smithsonian Misc. Coll.* 81, Dec. 1, 1928; Whitmore, E. R.: *Phys. Therapy*, Aug., 1929, 47: 419; Christensen, T.: *Über biologischen Strahlenwirkung. Strahlentherapie*, 1919, 9:590; Nagelschmidt, Franz: Ultra-violet Light and Bioluminescence. *A. J. Phys. Ther.*, Aug., 1928, 5:222.
- 2.—Lakhovsky, George: "L'Oscillation Cellulaire." Gastoin, Doin et Cie., Paris, 1931. (A valuable bibliography is appended.) Lakhovsky, George: "L'Origine de la Vie." Gautier Vilouer, Paris, 1924.
- 3.—"Cosmic Rays Age Man." *New York Times*, Sept. 15, 1933.
- 4.—Kilner, W. J.: "The Human Atmosphere (The Aura)" E. P. Dutton & Co., New York, 1926.
- 5.—Rahn, Otto: Communication to the summer meeting of the American Association for the Advancement of Science, at Syracuse, N. Y. Reported in the *N. Y. Times*, April 21, 1932.
- 6.—Crile, George W.: Communication to the Century of Progress Congress of the American College of Surgeons, at the Hall of Science, Chicago, as reported in the *New York Times*, Oct. 8, 1933.
- 7.—Gurwitsch, Alexander: Communication in the *Krasnaya Gazetta*, official daily newspaper of the Leningrad Soviet, from the division of experimental biology of the Institute of Experimental Medicine, Leningrad, reported in the *N. Y. Times*, Feb. 5, 1933.
- 8.—Gurwitsch, A.: "Das Problem der Zellteilung physiologische betrachtet." Julius Springer, Berlin, 1926; Reiter, T., and Gabor, D.: "Zellteilung und Strahlung." Julius Springer, Berlin, 1928.
- 9.—Crile, G. W.: *Ibid supra*.
- 10.—Gurwitsch, A.: *Ibid supra*.
- 11.—*New York Times*, Feb. 5, 1933.
- 12.—Crile, G. W.: In an address before the tenth anniversary meeting of the American Society of Regional Anesthesia, called the "George W. Crile Meeting," delivered at the N. Y. Academy of Medicine, Nov. 8 and reported in the *N. Y. Times* of Nov. 9, 1933.
- 13.—Gosset, A., Gutmann, A., Lakhovsky, G. and Magrou, I.: *Essai de Therapeutique du "Cancer Experimental" des Plantes. Compte. Rendus de la Societe de Biologie*, 91: 626-628, 1924.
- 14.—Lakhovsky, A.: *L'Oscillation Cellulaire. Locus cit. supra*.
- 15.—Schereschewsky, J. W.: The Physiological Effects of Currents of Very High Frequency. *U. S. Public Health Reports*, Sept. 10, 1926, 41, No. 37; The Action of Currents of Very High Frequency upon Tissue Cells. *U. S. Public Health Reports*, April 20, 1928, 43, No. 16.
- 16.—Schliephake, Erwin: Ultra-Short Electric Waves: A New Development in Diathermy. *Brit. J. Phys. Med.*, Sept., 1933, 8:69-71.
- 17.—Scott, Gilbert Loughton, M.R.C.S., L.R.C.P., B.A., Oxon.: "The Abrams Treatment in Practice: an Investigation." Geoffrey Bles, London, 1924; Thomson, Mather: *Brit. J. Phys. Med.*, Oct., 1933, 8:98.
- 18.—*Locus cit. supra*.
- 19.—Dodge, Raymond: A Working Hypothesis for Experimental Study of Cancer. *Yale J. Biol. and Med.*, Jan., 1933, 5:269.

471 Park Ave.

EMOTIONALISM AND PROPAGANDA

The American people have been swayed by emotions for many years. They have been swept off their feet by bold declarations of men and women who did not cite any evidence to sustain their positions. Wild charges have been made against this or that person, this or that industry. And all for a purpose, and that purpose not the common good and welfare of the people of the United States but, instead, that sanity for a time may be subordinated to extravagance in order that our system of economics, based upon the individual property right, may be abolished and our form of government, which recognizes that right and protects and defends the individual in the exercise thereof, may be destroyed and a form of government wherein this right is not recognized established.—COMMITTEE ON AMERICAN EDUCATION.

NOTES AND ABSTRACTS

A Method of Producing Hyperpyrexia by Diathermy

IN *Brit. J. Physical Med.*, Aug. 1932, Dr. A. J. D. Cameron describes a method of producing hyperpyrexia by applying the diathermy current through water to a patient seated or reclining in a heat cabinet.

The cabinet is fitted with 16 electric carbon filament lamps, which supply a small intensity of radiant heat. This heat is supplementary to the heating produced by a diathermy current applied to the whole body, which current is introduced into the body through four baths of warm water, surrounding the forearms and legs of the patient. The conductivity of the water may be increased by the addition of sodium bicarbonate. The patient is insulated as far as possible, so that radiation of heat from his body is reduced to a minimum. He lies surrounded by blankets on a rubber sheet, which is brought over his whole body and again covered by blanket. A diathermy current of 1400 ma. is used and a rise in temperature of 5° to 7° F. is obtained quickly.

Why Continue the Nitrocellulose Film?

THE hazard of hospital fires from the use of nitrocellulose x-ray films is now well known. Even if all humanitarian considerations be disregarded, it is difficult to see why hospital authorities should continue to take this chance. The use of safety x-ray film (cellulose acetate) would not add ten cents to the cost of an x-ray examination for which the patient pays ten dollars or more. Why should the lives of patients and staff be jeopardized?—R. S. MOULTON, Technical Secretary, National Fire Protection Assoc. in *Radiology*, Aug., 1932.

BOOKS

Wolf: Physical Therapy

TEXTBOOK OF PHYSICAL THERAPY. By Heinrich F. Wolf, M.D., Chief of the Department of Physical Therapy, Mt. Sinai Hospital and Dispensary, New York; President, New York Physical Therapy Society. With a fore-

word by Lewellys F. Barker, M.D., LL.D., Professor Emeritus of Medicine, Johns Hopkins University School of Medicine, Baltimore. Illustrated. New York and London: D. Appleton-Century Company, Incorporated. Price \$5.50.

In this treatise, Dr. Wolf has made a laudable effort to present the subject of physical therapy in a form acceptable to contemporary investigators and suitable for students and practitioners who want a textbook and a manual of ready reference. He has succeeded so well that the book will give them the necessary details of the technical application, the physical and biologic principles on which they are based, and the criteria for decisions regarding their utilization. The purpose of the book is not to give suggestions about how to treat cases as a class, but how to select the treatment necessary in individual cases. Its suggestions are given, as far as possible, on the basis of physiologic and pathologic reasoning. The forms of technic which are considered to be useless and antiquated have been omitted. This conserves the time and energy of the reader for the discussions of procedures which are accepted as useful for physiologic reasons or effective on an empiric basis. The work is the result of an experience in all branches of physical therapy, gathered in thirty years of medical practice. Chapters have been added by William Bierman, M.D., Director of Physical Therapy, Beth Israel Hospital, New York; Adolph A. Lilien, M.D., Associated Physical Therapist, Mt. Sinai Hospital, New York; Farel Jouard, M.D., Adjunct Physical Therapist, Mt. Sinai Hospital, New York; and Madge C. L. McGuinness, A.B., M.D., Chief of Clinic, Department of Physical Therapy, Vanderbilt Clinic, and Director of Physical Therapy, Misericordia Hospital, New York. All forms of physical therapy are considered except roentgenotherapy and radiotherapy.

NEWS

International Congress of Radiology

THE Fourth International Congress of Radiology will be held at Zurich, Switzerland, July 24 to 31, 1934. At the general meetings, practical discussions of problems in radiologic diagnosis and treatment will be presented; and there will also be sectional meetings, as well as elaborate social features.

Full information can be obtained from Dr. Med. H. E. Walther, Gloriestrasse 14, Zurich, Switzerland.

STOMATOLOGY

OFFICIAL ORGAN OF THE
AMERICAN SOCIETY OF STOMATOLOGISTS

ASSOCIATE EDITOR

ALFRED J. ASGIS, ScB., M.A., D.D.S.

Progress in Clinical Dentistry

By Alfred J. Asgis, Sc.B., M.A., D.D.S., F.A.S.S., New York, N.Y.

Department of Oral Surgery, New York University College of Dentistry and
Dental Division, Bellevue Hospital

THE new dentistry is rightly being correlated as an important division of preventive medicine and forcefully emphasized by Miner¹. The recognition of the new status of dentistry by scientific medicine promises beneficial results to clinical medico-dental progress. The broadening of dentistry was clearly shown in last year's contributions to the *Stomatology Department* of this Journal. In brief review, we are now in a position to direct attention to some of the contributions made to the fundamental oral sciences, diagnostics and therapeutics, though, of course, critical analysis of the advances in principles, methods and improvements in technic, is impossible in this limited space.

Significant is the recent classification of diseases of the mouth among those of the digestive system. Logie's² standard nomenclature of diseases should serve a practical purpose for statistical and clinical studies in private dental practice and hospital dental services. A more harmonized grouping of diseases of mouth organs, giving our special field greater unity, would prove most helpful to dentists and other practitioners.

Valuable contributions have been made in dental histology, bacteriology, oral pathology, hygiene and sanitation by Bodecker, Thoma, Bunting, Hawkins, Box, Stillman and others.

Diagnostics

Oral diagnosis has received more attention in the past five years than at any time in the history of dentistry. Hayes³ made a successful attempt to bring the entire subject within a unified scope by incorporating diseases of the mouth as part of the dentist's equipment in diagnosis. McGehee⁴, in his recent text, has again called attention to the need of coordinating the material in the realm of stomatology, as a step in the teaching of

oral diagnosis in the dental school. Activities along organizational lines have been carried on by Long⁵, Ziskin⁶, Cushman⁷ and others, with the result that the American Association for the Advancement of Oral Diagnosis was organized in 1933. According to Ryder it is not the aim of this Society to establish another dental specialty within the dental profession nor to create a new "distinct grouping of specialists."

Oral Therapeutics

To give even a birdseye view of the efforts in oral therapeutics and its recent progress, is a difficult undertaking in view of the lack of organized material according to scope or methodology. Oral patients present three groups: strictly stomatologic cases; borderline cases; and patients with systemic disorders related to etiologic mouth infections.

Medical therapy. Curative and preventive measures to arrest and control caries, gingivitis and occlusal and facial deformities have produced worth-while results, notably Strang's text on orthodontia⁸. Much work has centered around the development of a newer approach to the handling of oral conditions met with in children. Valuable contributions have been made by Woodcock⁹, giving children's care a wider outlook and broader sphere of activity, rather than the orthodox consideration of dental treatment for children being merely a matter of filling "holes" or "pulling" teeth. Her discussion of the doctrine of wholeness will prove most instructive to all interested in child care¹⁰. The various problems of diagnosis and treatment of dental disorders in children is presented for the first time in text form, in a comprehensive manner, by Casto¹¹. The operative procedures for the prevention of the extension of dental caries, known as prophyl-

lactic odontotomy, is given to the profession in an instructive volume on technic by Hyatt and his associates¹².

In the preventive aspects, diet and nutrition studies are still of an experimental nature. Hanke¹³, in his recent work, claims to have observed the disappearance of gingivitis and an arrest of about fifty percent of dental caries by the addition of orange and lemon juice to the diet. The clinical application of this dietary regimen will show its real value after a careful check of results obtained in practice in general.

Surgical therapy. The announcements by Leo Winter¹⁴ of a new ischemic agent to be used in local anesthetic solutions, is probably one of the most outstanding events of the year. The report of Winter's researches is based on observations of over 4,000 clinical cases at New York University, Bellevue Hospital and in his private practice. The cases studied included those with heart disease, high blood pressure, hyperthyroidism and those generally considered poor surgical risks. The anesthetic solution contains no epinephrin, and therefore is not contraindicated in those patients who are susceptible to that drug. It is of the following composition:

Procaine	2 percent
Corbetrin (3, 4-dihydroxy-phenyl-amino-propanol hydrochloride)	1:10,000
Sodium chloride	0.2 percent
Potassium sulphate	0.4 percent

Fischer¹⁵ reports that previous attempts to substitute less toxic agents, such as Clauden, eserine or ephedrine, for epinephrin have been unsatisfactory and advises caution in the use of substitutes. He considers Synephrin tartrate, a substance related to epinephrin, recently introduced, more promising than the other substitutes. Fischer and others recommend a slow injection technic, to offset the ill effects in persons hypersensitive to epinephrin. This is a subject of interest to physicians as well, as pointed out by Lake¹⁶ a year ago, for it is one of the drugs, with the properties and uses of which every physician should be familiar, because its widest use is in local anesthesia.

Oral surgical therapy embraces, today, the care of patients of the ambulatory and hospitalized type, with major complications. Kemper emphasizes the need of improved methods of teaching dental students hospital routine, and ward rounds with medical and surgical interns so that they may acquire ease in the care of oral patients at the bedside.

Functional therapy. Medical and surgical care of oral patients is a preliminary requisite step to mouth rehabilitation. In the prosthetic field, oral diagnosis is as important a requirement for the restoration of the mouth to normality as in surgical care. An artificial substitute in the mouth of a patient behaves differently than on the stone model. In the

mouth, the artificial appliance becomes a part of the oral cavity, affecting its biologic environment. The patients' reactions also play an important part. The care of the properly-functioning, rehabilitated mouth taxes the trained clinician in his ability to recognize and differentiate the normal from the abnormally reconstructed oral cavity. The functional concept gives to the trend of intra-oral prosthesis a bio-medical direction and places extra-oral laboratory technology on a higher plane of coordination.

Postoperative care: Professor Leo Winter has, probably more than anyone else among American oral surgeons, stressed the significance of complications following tooth extraction and oral surgical procedures. Physical therapy, hydrotherapy and drug therapy have been used. In a series of over 120 post-exodontic and surgical cases, I have used with very satisfactory results, a new preparation, *Mallophene*. I found the use of this drug also very effective following electrosurgical treatment, in various forms of stomatitis, alveolectomies and for relief of irritation from artificial mouth restorations. Box¹⁷, in a limited trial with the drug in necrotic gingivitis ("trench mouth"), has found it highly satisfactory. Brady¹⁸ has used it more extensively in Vincent's infection and believes it to be more useful than the other forms of drug therapy he formerly employed.

Psychostomatology

In medicine, well established psychologic facts and principles have been utilized in prevention, diagnosis and treatment. Bridges¹⁹ pointed out that clinical instructors should be familiar with psychology, normal and abnormal, as well as with the other basic sciences useful in the practice of medicine. At our university, dental students receive instruction in psychotherapeutics, in the lectures on oral surgery given by the chief of our department. This field is receiving greater attention in the hands of German clinicians, notably Hans Sachs²⁰, of Berlin, whose recent work lays the background for the development of this subject along scientific lines. That this subject can both be taught and learned, seems certain. A splendid presentation of clinical material on psychostomatology was recently made by Fairbairn²¹.

There is undoubtedly a place for psychological notes in the oral case history.

Future Progress

CLINICAL MEDICINE AND SURGERY, in its first year of medico-dental effort, has done much to stimulate cooperation between dentists and physicians. The literature it published in 1933 and the new list of very practical contributors for 1934, suggests that it will become the leading mouthpiece for stomatologists in America. We need greater support from the 3,000 stomatologists, to enable our message to reach a wider audience.

I have not indicated in this review the progress that has been made in *medico-dental sociology*, a subject related to dental socio-economics. With the aid of the progressive element in the profession, our Journal hopes to report, in 1935, to the dental and medical professions, advances far more outstanding in stomatology and clinical dentistry.

References

- 1.—Miner, Leroy M. S.: "The New Dentistry: A Phase of Preventive Medicine." Harvard University Press, Cambridge, Mass., 1933.
- 2.—Logie, H. B.: "A Standard Classified Nomenclature of Disease, Compiled by the National Conference on Nomenclature of Diseases." The Commonwealth Fund, N. Y., 1933.
- 3.—Hayes, Louis V.: Diseases of the Mouth. *Dent. Outlook* 20:328, Aug., 1933.
- 4.—McGehee, W. H. O.: "A Textbook of Operative Dentistry." P. Blakiston's Sons and Co., Phila., 1930.
- 5.—Long, Orville S.: History of Movement to Advance Oral Diagnosis. *J. A. D. A.* 20:1829, Oct., 1933.
- 6.—Ziskin, Daniel: Oral Diagnosis as It Functions Today. *J. A. D. A.* 20:1702, Sept., 1933.
- 7.—Cushman, Frank H.: The Field for Organized Effort in Oral Diagnosis. *J. A. D. A.* 20:1784, Oct., 1933.
- 8.—Strang, Robert: "A Textbook of Orthodontia." Lea and Febiger, Phila., 1933.
- 9.—Woodcock, I. J.: The Psychology of Child Patients. *Dent. Cosmos*, March, 1931.
- 10.—Woodcock, I. J.: The Doctrine of Wholeness in its Application to Oral Health. *Med. and Prof. Woman's J.*, Sept., 1933.
- 11.—Casto, Theo.: "Pedodontology." Temple University Dental School, Philadelphia, 1933.
- 12.—Hyatt, T. et al.: "Prophylactic Odontotomy." The Macmillan Co., N. Y., 1933.
- 13.—Hianke, Milton T.: "Diet and Dental Health." University of Chicago Press, Chicago, 1933.
- 14.—Winter, Leo: An Experimental and Clinical Investigation of a New Ischemic Agent for Use in Local Anesthetic Solutions. *Dent. Outlook* 20:525, Dec., 1933.
- 15.—Fischer, Guido: "Local Anesthesia in Dentistry" translated by Louis I. Grossman. Lea and Febiger, Phila., 1933.
- 16.—Lake, George B.: Epinephrin. *Clin. Med. & Surg.* 39:839, Dec., 1932.
- 17.—Box, Harold K.: Necrotic Gingivitis (Trench Mouth). *Canad. Dent. Research Found. Bull.*, Noll, The University of Toronto Press, 1930.
- 18.—Brady, E. P.: Trench Mouth. *St. Louis Dent. Soc. Bull.*, Dec., 1931.
- 19.—Bridges, James W.: "Psychology, Normal and Abnormal." D. Appleton & Co., N. Y., 1930.
- 20.—Sachs, Hans: Psychologische Ratschläge für die Zahnärztliche Praxis. *Berlinische Verlagsanstalt*, Berlin, 1933.
- 21.—Fairbairn, W. R. D.: Psychological Aspects of Dentistry. *Dent. Rec.* 53:465, Oct., 1933.

310 West 72nd St.

DIAGNOSTIC AND THERAPEUTIC NOTES

Systemic Conditions and Oral Surgical Operations

MOUTH diseases belong to the type of lesions which frequently threaten or shorten the patient's life and, therefore, urgently demand surgical interference; but, with the exception of a few, they are not emergencies and there is sufficient time to make all necessary preparations. In this connection, pathologic, bacteriologic and specific examinations are of great importance. Examination for possible hemorrhage is most important. Dental practitioners should consider most carefully every patient upon whom surgical work is to be done. A history should be taken to ascertain whether the patient or any other members of his family have shown bleeding tendencies, and, if so, such patients should be handled with exceeding care and coagulation tests should be made.—DR. JAS. L. ZEMSKY, of New York, in *Dent. Outlook*, Feb., 1932.

In the past year, our message reached only 4,000 dentists—indeed a small percentage of the 75,000 practitioners. It costs money to reach a larger number and we have some excellent material for 1934, which we hope to be able to publish in our Department. We need more text pages and we depend on your support to obtain the necessary advertising. Speak to your local dealer, supply-house manager and laboratory, and persuade them to take space in our Journal. Tell them the message we bring the profession. All work on this Department is done gratis by our members, for the cause of better dentistry and the improvement of scientific oral health service for the American people.

It is up to you to give our work a New Deal in 1934. Send the names of prospective advertising concerns to Dr. I. G. Woodcock, Secretary, 133 E. 58th St., New York City.

A. J. A.

Attention Stomatologists!

WE APPEAL to our readers and Society members to invite dental manufacturers, supply houses and dental laboratories to take space in our Journal. We feel that during the present depression we are entitled to some support from all those who wish to see our efforts serve best and most.

Toothache Gum

WHEN necessary, an efficient toothache gum may be made by placing one dram of phenol in a two-dram vial, adding an equal quantity of collodion, and shaking the mixture. The cavity of the tooth is cleaned out, a small portion of the gum is inserted, and a little absorbent cotton placed over the gum.—R. S. MACARTHUR, M.D., Los Angeles, Calif.

A LIVING FOR THE DOCTOR

Progress of Medical Economics

By Emmet Keating, M.D., Chicago.

THE progress of medical economics has been steadily and increasingly toward the elimination of the family doctor. This progress has been successfully and persistently engineered by several agencies, the medical colleges and health departments heading the list.

It has not been the aim or intention of the medical colleges to eliminate the family doctor. In their efforts to improve the standard of medical education they have, of necessity, emphasized intensive teaching of the specialties. There is nothing about their efforts, in this connection, that merits condemnation, neither is there anything in the possession of extensive knowledge of the various specialties to prevent a physician from being a general practitioner. Such knowledge adds greatly to his ability to serve his community.

It is not the fault of the medical colleges that students, receiving a good foundation in each of the specialties, conclude that they should forsake the rôle of the family doctor to pursue the supposedly easier and more lucrative way of the specialties. The medical colleges may be criticised for permitting the system, in force in some hospitals, of detailing interns to exclusive service in the various specialties. This system has two very grave faults: The intern who gives all his time to the diagnosis and care of patients requiring surgical treatment cannot be expected to fit himself for the rôle of family doctor; likewise, the intern who confines his attention to the diagnosis and care of patients requiring medical treatment will be very much at sea when confronted with the necessity of determining the presence of conditions that will respond only to surgical measures.

The second fault is the cultivation of the idea, in the minds of the interns, that general practice is beneath their dignity. The intern who is compelled to follow this procedure is unfortunate, because his lack of general training makes it more difficult for him to become a good doctor. This lack deprives him of the ability to give his patients the best service. That such training adds to his technical ability in a narrow field, is not to be denied, but the gaining of basic general knowledge by the beginner should not be sacrificed to the acquiring of increased technical skill.

Free Clinics

Free clinics, created for the benefit of the student, are necessary adjuncts to the providing of medical education. Were they limited to the worthy poor, who are inmates of the county and state hospitals, they would serve their purpose and private practice would not be injured. There are comparatively few lay people and comparatively few physicians who understand and realize that the encouragement of free medical service to large numbers of poor people is an economic mistake. There are few people who understand or realize that the giving away to poor people of medical service, on a scale greater than that needed to provide actual teaching material, is also an economic mistake. Health is a commodity of the highest value, and the individual who expects to obtain and possess it without paying for it will be disappointed. The clinic patient pays by forfeiting his rights to the service, privacy and attention he would receive if he were in a position to pay even a modest fee.

In the pre-dispensary days, the physicians who treated those unable to pay did so willingly, partly from the eleemosynary standpoint, but more particularly from the selfish standpoint. No one knew better than the physician who treated this class of patients how gratefully they advertised him to their friends. It was well known by his rich clientele that the late Doctor Frank Billings treated his poor patients with scrupulous care. This advertisement was not confined to the class unable to pay, but was communicated all the way up the social scale.

Health Departments and Industrial Physicians

What are the aims and intentions of health departments? Health departments were founded primarily to improve sanitation and, in case of national service, to exclude infected people and infected goods. Health departments were visioned and founded by doctors possessed of the highest ideals. These men had no thought that health departments would, in the course of time, become unfair competitors of those engaged in the private practice of medicine. The discovery of the value of health departments as havens for dishonest payrollers and as a means of providing many jobs unnecessary to the commonwealth, but of great value to political ma-

chines, is responsible for the unwarranted existence of present-day types of health departments. The opportunity for buying means of transportation, medical and surgical supplies and enormous quantities of biologicals for free distribution is a luscious political plum.

The third group who have played havoc with both general and special practice is the industrial surgeons. Their existence, in such large numbers, is another example of economic blundering. In every large industrial plant there is and always will be a great and insistent need for industrial surgeons. These men should be few in number and select in quality. They should not practice either medicine or surgery, but should give their entire time to the improvement of working conditions and to the selection of proper jobs for individual workers. They should encourage employers to pay wages that will make it possible for each employee to choose his own physician.

Lay Groups

The aforementioned groups are, for the most part, medical. We now come to the consideration of lay groups, where the physician is the servant, whose financial or scientific profit is confined to those few doctors who make possible the creation and continuance of schemes of this kind.

Workmen's Compensation Insurance heads this list. Supposedly the friend of labor, it is one of the worst enemies of labor. Supposedly a protector of the employer, it is one of the greatest liabilities of industry.

The last of the groups that threaten the existence of American Medicine has an overwhelming influence that is far reaching and disturbing to the body politic. It is that gesture of good intent, but mountain of economic waste, known as organized charity. Here we have both state and private charity organizations that foster the preservation of the unfit and create a protecting influence, adding to our tax and insurance costs by keeping thieves out of jail and murderers from being promptly executed.

These are the forces that, if not checked, will destroy the private practice of medicine in all its fields, and eventually destroy medicine itself.

The Remedy

The cure is almost entirely in the hands

of Organized Medicine, which, if it attempts to remove the profession from lay domination, will assume a responsibility for the execution and completion of a tremendous task. It will have the bitter opposition of the selfish in high places and the mass opposition of an army of doctors who serve in lowly capacities. It cannot be initiated by the men at 535 North Dearborn Street. They are the captains and officers of the ship. Their duties are to carry out the policies initiated by the high command of the American Medical Association, who occupy important positions in the leading medical colleges and large hospitals throughout the United States. They are the ones who have always dictated and will continue to dictate the policies of the organization. It is right and proper that they should. The duties of the officers at headquarters are to help put these policies in force.

In the past, when invasion of medicine by lay organizations was threatened or occurred, there were a few specialists who quieted objections on the part of doctors by the statement, "The thing is here and it would be better if we went along and guided it, than it would be if we permit it to steer its course without the influence of medical men." This foolish and bad advice was at once championed by those doctors who played the part of political bosses, and objection was immediately silenced. Betrayals of that kind have helped bring us to our present undesirable status.

The remedy is now in the hands of physicians of clear vision, who occupy positions in the high command; men without hope or desire of personal reward, who must take the lead in removing medicine from the domination of lay men and lay organizations. The term "must" does not imply that any one is going to attempt to compel men of clear vision and unselfish spirit to engage in a combat of this kind. It is used in the sense that, if a change is to be made, those are the type of men who will undertake the task. The battle will be on a long front and will include the problem of too many medical schools and the prevention of future graduates from foreign schools, whether American citizens or not, from practicing medicine within the confines of the United States.

2800 Milwaukee Ave.

CHARITY A SPIRITUAL ASSET

It is nothing short of amusing to note the alarm doctors display when anyone has the temerity to assert that out-patient departments are unnecessary, either for teaching purposes or for treating the sick poor. The doctors have not shirked their duty to the poor, but the dispensaries have stolen away the poor and, in so doing, have deprived the doctor of his greatest spiritual asset.—DR. EMMET KEATING, Chicago.

NOTES AND ABSTRACTS

Medico-Legal Information

EVERY physician, like all other citizens, is liable to be called into court in one way or another; and the position of the medical man is such that he is especially so liable, by reason of his frequent service as an expert witness and his less common summoning to answer charges of malpractice, as well as civil suits to recover money, where he may appear as plaintiff or defendant.

Since few doctors have had legal training, most of them are at a disadvantage when they appear in the unfamiliar and highly formal and artificial atmosphere of the courtroom, so we believe that our readers will

welcome the monthly presentation of Medico-Legal Notes, which will keep them in touch with basic decisions which have been rendered, touching matters which are likely to be of interest to the greatest number. These Notes are prepared by a physician of standing who prefers to remain anonymous.

We want to know how many of our readers care for this service, and shall appreciate hearing from as many as possible (a postal card will do), expressing their interest or lack of it. *If we do not hear from a considerable number who find it profitable, it will be discontinued after three months.*

G.B.L.

Medico-Legal Notes

Legal Definition of "Medical Attendance"

COURTS have generally held that, while the term "medical attendance" carries the implication of professional medical service rendered, it does not necessarily imply that this service must be rendered by the physician personally and physically. The term must be construed to include such services as supervision of the nursing, receiving reports from a nurse or family, and generally watching the progress of the case.

Under this interpretation of the term, it was held (Indiana) that, despite the fact that the physician did not see his patient every day or communicate with her directly, he had admittedly given her instructions which she was carrying out. For these reasons, the court held that his services were such as to come within the meaning of the term "medical attendance."

Comment: This decision is important to physicians because of the frequent disputes which arise between physician and patient when professional bills are presented for payment. The physician should know that "medical attendance" is a broad term and that it embraces a wide field; in fact, any kind of service he might render on behalf of the patient, even though he did it by telephone or through directions to others. By the same token, however, he should remember that he is charged with responsibility for services so rendered, even though he was not personally in attendance. One cannot eat a cake and still have it.

Good Results Not Guaranteed by the Doctor

THE law does not demand that the doctor guarantee a good result. An Indiana court recently declared that it could not possibly be maintained that "every physician who administers a dose of medicine, and every surgeon who performs an operation, does so at his peril if the result happens to be not good; that a jury of laymen might mulct him in damages if they, as laymen, should think that he had been negligent in the matter complained of, although his conduct has been in harmony with well-recognized, standard methods, used by physicians generally in such cases."

Comment: While the law does not expect the doctor to guarantee a good result, it does demand of him that he do his best. The fact that the result has been unsatisfactory is not, in itself, evidence of neglect or lack of skill. Negligence or lack of skill must be proved by a preponderance of evidence. If the doctor can show that he used all reasonable care and skill in the performance of his duty, there can be no charge of negligence, whatever the result of his treatment has been. The court will generally protect him.

Is the Doctor Responsible for His Technician?

IN MANY of the States, the technician has no legal status, as such. He is simply regarded as an employee and agent of the doctor or dentist by whom he is employed. He is not held personally liable.

In the case of a patient who suffered a burn of the face as the result of a roentgenogram

made by a technician in the employ of a dentist, the court (California) held that the dentist defendant was liable for the injury resulting from the negligence of his employee, the technician.

Can the Doctor's Automobile be Seized by a Judgment Debtor?

THE doctor's automobile must be considered a "tool or instrument" necessary for the conduct of his profession, and as such, is therefore exempt from seizure by the judgment creditor, according to a decision of the Louisiana Court of Appeals. The law generally recognizes this status of the doctor's automobile and exercises this protection from seizure of all tools and instruments which are necessary for the conduct of the trade or profession by means of which the debtor earns his livelihood. The doctor's auto and the carpenter's saw therefore come under the same protection of the law.

One Medical Expert Against Many

HAS the jury the right or liberty to accept the opinion of a single expert, as opposed to the contrary opinion of many experts? The Texas Civil Court of Appeals held that it was within the province of the lay jury to accept the opinion of the single expert, even though it was in direct opposition to the opinion of many other experts. The court reasoned that to hold otherwise would be tantamount to saying that the verdict of the jury, to be upheld, must be in favor of the party with the largest number of experts. In other words, that the judgment would be influenced by numbers rather than by the quality and character of the expert testimony.

Comment: While this ruling seems eminently fair and proper, it would appear to belittle the value of a preponderance of expert opinion. Under this ruling it is left to the jury to appraise the value of the expert testimony, in total disregard of the number of experts so testifying on one side, as against the testimony of the one expert on the other side. And it might very well happen that the single expert (testifying for a poor plaintiff) was right and the many experts (engaged by a rich defendant) were wrong. Herein lies the wisdom and the justice of the court's ruling.

Our Changing Social Outlook

A MAN with a wife and four small children had been out of work for several months. His friends and neighbors realized that the family must be desperate. A neighbor who was a foreman in a big factory canvassed the officials of his company and pleaded with them to give his friend a job. A place was opened—a good job.

"You be at my house at seven tomorrow morning," said the foreman. "Don't be late."

Next day the foreman backed his car out of the garage and parked in front of his house a few minutes before the hour. The neighbor had not appeared at five minutes after the hour. So the foreman drove to the house and found his friend. He hustled him into the car and by driving fast they managed to arrive on time.

Three days later the new employee failed to report until noon. A month later he was moved to a shift that worked from 5 a. m. until 2 p. m. This was too difficult for the man whose family was starving. He failed to report for three days, but showed up on pay-day, and was promptly fired.

The foreman is now accused of having recommended a lazy bum. The unemployed worker spends his mornings in bed brooding about his "wrongs."—*Little Journ. for Pediatricists*, Nov., 1933.

Size of Hospitals

A HOSPITAL unit of more than 500 beds is seldom managed for the patients' best welfare, though it may be cheaper to care for them in larger groups.—DR. RICHARD C. CABOT, in "The Meaning of Right and Wrong."

Talking to Night Callers

IF A PATIENT calls on a physician at night, the cause may be trivial or important, but the usual way to find out is to open a window and holler down, or hop out of bed and run to the door—neither of which is highly satisfactory, especially in the winter.

Dr. N. C. Hypher, of Slough, Bucks, England, reports in *Brit. Med. Journ.* for Oct. 14, 1933, a way to avoid this. He has installed an apparatus, with a telephone hand-set, by his bed, and alongside the front door a combination loud-speaker, microphone and flash-light.

A patient rings the bell; the doctor takes the receiver and presses a switch which flashes the light, illuminating a sign "Speak Here," and turns on the whole apparatus; the patient states his case (in a whisper, if desired); the doctor answers—perhaps the matter can be adjusted in a minute or two: in any case the weary medicus does not have to get out of bed on false alarms.

This arrangement (which is patented in England) operates on dry batteries and can be installed in two hours. A firm in London sells, it, complete, for five guineas (about \$25), as the "Autocall." It ought to be helpful to many.

THE SEMINAR

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.)

Discussions should reach this office not later than the 1st of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.)

Problem No. 11—1933 (Medical)

Presented by Dr. E. A. Johnson, Hugo, Okla.
(See CLIN. MED. & SURG., Nov., 1933, p. 602)

RECAPITULATION: A young woman of 19 years, with no significant personal or family history elicited, began to lose weight, appetite and strength, lost interest in her studies and other activities and found her singing voice failing. She did not cough, but had a frequent desire to clear her throat.

Examination showed the vocal cords irritated and the tonsils badly inflamed. (A laryngologist removed the tonsils.) Her temperature ranged between 99.6° and 100.6° F.; blood pressure, 96/60; hemoglobin, 40 percent; red blood cells, 3,000,000; leukocytes, 10,000 (no differential count made); tuberculin test, negative on three occasions; urine, normal.

She was put to bed, but the fever remained constant for three months, with little else except weakness and apathy. She gained weight. For the past three months she has showed no fever except when she moves about; but the slightest exertion will cause a temperature of 100° F. At her menstrual periods she feels a "sinking" sensation at times.

Requirement: Suggest diagnosis (with reasons) and treatment.

Discussion by Dr. E. C. Junger, Soldier, Ia.

PROBLEM No. 11 is a description of the type of office patient who frequently visits the general practitioner, presenting no special physical disease state that could be demonstrated in his office.

This girl's emotions are developing and are becoming dominant in her life. I assume that her living habits and home environment are normal. What does she read? Is she popular with the boys? Is she sentimental and romantic?

I believe that this young woman has some pelvic irritation (probably a retroverted uterus), which reflexly stimulates the thy-

roid. Such a state of affairs could cause all or most of the symptoms of which she complains, and exercise would aggravate them. Even fever may be the result of a psychoneurotic condition, which may depend upon pelvic trouble.

Discussion by Dr. Leon Reznikoff, Secaucus, N. J.

THE main symptomatic factor to be considered in this case is mild fever over a prolonged period of time.

As there are numerous conditions that might cause this, it seems to me that the case was not sufficiently worked up, from the laboratory standpoint. I should like to have a blood Wassermann examination; differential blood count; agglutination test for *Bacillus melitensis*; serum reactions (Widal tests); examination of the vaginal discharge for gonococci; and, finally, a blood culture and urine culture for *B. coli* bacilluria. X-Ray examinations of the teeth, chest and spine, for caries, and of the nasal sinuses, are also indicated in this case.

With the indefinite symptoms, except for slight fever, mentioned in this case, a proper diagnosis is impossible and guess-work undesirable. The laboratory data that could be obtained from the above examinations would throw light on and help to exclude the following conditions: tuberculous internal lymph glands; chronic sepsis in connection with the teeth and nasal sinuses; colitis with intestinal toxemia; pyosalpinx; spinal caries; psoas abscess; chronic otitis media; and secondary syphilis.

Not having sufficient laboratory and clinical data, a definite diagnosis is impossible, and therefore no specific treatment of any kind could be prescribed. However, if I were obliged to take care of the case in a community where for some reason the above tests could not be carried out, I would treat the patient symptomatically. As the outstanding symptom is mild fever, the patient should be kept in bed, plenty of fluids administered and the bowels kept open.

**Discussion by Dr. John Clark,
Longton, Kans.**

THIS case has all of the earmarks of tuberculosis. I do not see why the tonsils were removed. At least we should be informed that no ulcers about the vocal cords were discovered.

I cannot think of any other condition that would run a fever like this case, except tuberculosis—that is, with the progressive weakness, loss of weight and fever, in a girl with chlorotic behavior at her menstrual periods.

Her vocal cord complaints, with the above symptoms, are highly significant of the dangerous advances the disease is making in this case. As I see it, a differential blood count would not help us to see any clearer how to prolong her life. That moderate white count merely says, with the fever, that a bad fire is burning and the body reserve is too low to put it out. The prognosis is bad in this case, because of the injury to the tonsil defense when the throat was already "on fire" lower down and could only be made worse by the shock and trauma of a tonsil operation; bad because cases like this smoulder apparently when, in reality, there is activity, both in the throat and chest.

This might explain why that test for tuberculosis was negative. We are not informed what tests were made. Surely tuberculosis could not be excluded unless the eye, skin and blood reactions were all negative. (A positive reaction would mean even less.)

The study of plasma lipoids might shed considerable light on the outcome of this case. Why do we get no hint from the use of the fluoroscope? Or did that examination include the evidence that the lungs were normal by fluoroscope, along with other accepted tests?

Treatment: Ultraviolet irradiation to the tonsil stubs for 3 or 4 minutes, twice, with a ten-day interval; stillingia linament applied to the throat once or twice a day; silica, 3X, 10 tablets every morning before breakfast; specific tincture *rumex crispus*, *uvedelia* and *alnus serrulata*, of each 4 drams (16 cc.), with water to make 4 ounces (120 cc.), take a teaspoonful one hour after meals; an hour, daily, in the morning sunshine; rest in bed; lean meats, broiled, at 6-hour intervals, with whole milk and fruits and only a moderate amount of fats.

**Discussion by Dr. F. F. Schwartz,
Fairport Harbor, Ohio**

WITH symptoms of weakness, loss of energy, progressive anemia, pyrexia especially on exertion, in a girl 19 years of age, after repeated tuberculin tests are negative, one focuses one's attention on *subacute bacterial endocarditis*, even though there is no cardiac pathosis at present. My sugges-

tion is to refer this young lady to a cardiac specialist for a thorough check-up.

Treatment: Rest in bed; sodium cacodylate intravenously; an ice-bag to her heart.

We should by no means forget to think about miliary tuberculosis, since it might show up even after repeated x-ray studies are negative, together with the Von Pirquet test.

**Further Comments by Dr. Johnson
(Dec. 12, 1933)**

IN LOOKING for possible endocrine dysfunction in this patient, I have been able to diagnose none, except possible moderate hyperthyroidism. She has occasional attacks of tachycardia, at times lasting several hours, without apparent reason, and a slight muscular tremor, but no exophthalmos. I have no basal metabolism apparatus.

The color-index of her blood is now 0.7, and the cell count is normal, except for a slight excess of polymorphonuclears.

I have been unable to elicit any history of contact with a tuberculous person.

Her menses are reasonably regular (23 to 28 day rhythm) and painless, with a moderate flow lasting 5 days.

She tells me that, in November, she had fever on the dates 1, 12 and 17 to 29, inclusive, and that her temperature rises when she is among people, subsiding when she is again alone. Also, that when she has fever it will subside if she sits in the sun for a while.

The trouble with her throat she describes as tiredness or tightness of the vocal cords following conversation. She also has occasional attacks of sharp pain in one or other supra-orbital region (never in both at the same time), lasting for a few seconds.

I am still at a loss for a diagnosis.

**Closing Discussion by Dr. George B. Lake,
Chicago**

A DEFINITE clue to this case came to me only after reading Dr. Johnson's further comments, just above. These strongly suggest that the condition is psychic, rather than physical, as Dr. Junger has hinted, though I doubt if his suspicion of pelvic irritation is well founded. Examination of these organs may be justifiable, but, if the case is largely or wholly psychic, it might aggravate the symptoms.

In considering psychic disease, we must first rule out physical conditions. This, it seems to me, has been rather thoroughly done, except for the anemia, which should be actively treated; though it might be well, so far as is practicable, to follow out Dr. Reznikoff's suggestions and to go more fully into the question of tuberculosis, as recommended by Dr. Clark.

The only objective findings in this case, in addition to the anemia, appear to be irregu-

lar fever; loss of weight; throat irritation (possibly the mechanical result of clearing her throat frequently); slight muscular tremor; and (if Dr. Johnson has actually counted her pulse at these times) attacks of tachycardia.

No doubt, in the early stages of this illness, Dr. Johnson took the patient's temperature himself, so we may assume that she actually had fever at that time; but the supplementary report suggests that, of late, she has been doing this herself, in which case we have no evidence of continuing fever except in her word—which may not be wholly reliable.

The loss of weight, muscular tremor, and even objective tachycardia, might result from wholly psychic causes, though a moderate degree of actual hyperthyroidism, resulting from an emotional state, is not improbable. It might be well to examine for adrenal inertia by the *iris test*, described by Dr. Ragland on page 626 of the December, 1933, issue of *CLIN. MED. & SURG.*

The points which most strongly suggest a psychic origin for this patient's symptoms are: Her age (late adolescence—a period of notorious emotional, and even physical, instability); the fact that most of her symptoms are purely subjective, and that the most prominent ones—loss of appetite and interest, easy fatigability, apathy, "sinking" sensations and transient irregular pains, are characteristic of so-called neurasthenia; and the fact that her chief putatively objective symptom (fever) and her throat distress are brought on or aggravated by social intercourse and disappear when she is alone.

Her only solidly objective symptom (anemia) might readily be the result of an insufficient diet, following the appearance of anorexia.

I suggest, if Dr. Johnson is familiar with the methods of psychic studies (not Freudian psychoanalysis), that he make such a study of this young woman (meanwhile adopting measures to correct her anemia and improve and balance her diet—vitamins and mineral salts, as well as the usual foodstuffs) and

proceed upon that basis. If he is inexperienced in psychotherapy, this patient should be referred to someone who can do that work adequately, tactfully and sympathetically.

Problem No. 1—1934 (Medical)

Presented by Dr. Herman J. Kooiker,
Milaca, Minn.

ON MARCH 24, 1933, C. G. J., age 70, complained of weakness and a loss of about 20 to 30 pounds in weight, during a period of approximately 4 months. Vague abdominal pains, more marked and cramplike upon movement of the bowels, together with diarrhea, had been present for about six weeks. He had, for many years, depended upon laxatives to move his bowels, prior to the onset of diarrhea. The stools were thin and whitish in color.

On physical examination, the patient was markedly emaciated. The heart and lungs were normal. The abdomen was tender throughout. Proctoscopic examination showed a very marked reddening of the mucosa of the large intestine.

Laboratory findings: The urine was negative for albumin and sugar and the glucose tolerance test was negative. The blood showed: hemoglobin, 80 percent; leukocytes, 8,050, with 75 percent polymorphonuclears; Wassermann test, negative; 12 mgm. of calcium per 100 cc. The stools were light-gray and many fat particles could be seen microscopically. The stomach contents, after a test meal, were normal, and sweetbreads were digested normally.

At x-ray examination, the stomach was found normal after a barium meal. The duodenal loop was very large. The gall-bladder was apparently diseased. The left lung showed an old fibroid tuberculosis in the apex.

After completing these studies, an exploration of the abdomen was considered, but the patient developed acute lobar pneumonia and died within 48 hours.

Requirement: Suggest probable diagnosis and possible treatment which might have helped.

WHERE DID YOUR TAXES GO?

Do a bit of figuring for yourself. Take what it cost you last year to live and deduct 23 percent of that amount. This deduction represents what you paid in taxes, and it matters not whether you are a street cleaner, a motorman, a farmer, a merchant or a banker. It makes no difference how little or how much you spend, twenty-three cents out of every dollar went into taxes, and for what? Have you any visible evidence that you have been in any manner, aided? Has the government, by the expenditure of this 23 cents in every dollar you paid, afforded you more protection in the exercise of your rights?—COMMITTEE ON AMERICAN EDUCATION.

CLINICAL NOTES and ABSTRACTS

Morphine Intravenously

MANY, if not all practitioners have, at one time or another, stood beside the bed of a restrained, wildly delirious maniac; a profoundly restless pneumonic or cardiac patient; a case of delirium tremens; a victim of ureteral or renal colic; a patient with an acute attack of gall-bladder pain; a screaming, painfully and extensively burned unfortunate; a badly compounded, painful fracture; or one of the many other indications for morphine, wondering why, after the conventional 20 to 30 minutes, the hypodermic injection has not given definite therapeutic evidence of action. In private practice minutes seem hours, in such cases. Very often impatience, on the part of solicitous relatives or friends, may tempt imprudence of therapy on the part of the attending physician, and a sudden accumulative effect of two or three rapidly-given doses of morphine may cause him subsequent concern.

To me, morphine, one of the most commonly used alkaloids, still enjoys the most empiricism, and this fact alone has been the incentive for the observations noted further on, and has prompted the use of the drug intravenously for more definite and prompt action. Nothing need be said, I am sure, of the humane side of the issue when time seems paramount.

The subsequent conclusions are based on 107 administrations of morphine and atropine combined, and on nineteen administrations of Hyoscine, Morphine and Cactoid after formulas No. 1 and No. 2.* The combinations of morphine are made from solutions of the ordinary hypodermic tablets made by any of the reputable houses. One may use distilled water as a solvent, although a pure tap water will suffice.

My appeal is for the more routine intravenous use of the combinations of morphine which I have mentioned, whenever this drug is indicated. The results, in my hands, have been most gratifying, fraught with no untoward sequelae and, if given immediately before an anesthetic is administered, the drug proves more beneficent, particularly if combined with atropine. It is a boon to the surgeon and anesthetist, because of its prompt and certain action, and the fact that it can be

given on the operating table offers more than one advantage that needs neither passing mention nor fancy to anticipate. To say the least, one is certain that it has been given and equally certain of its action, when administered in the operating or anteroom preceding the operation. The marked action of atropine, when general narcosis with ether by the open method is invoked, is a very valuable aid in diminishing the accumulation of annoying mucous secretions in the larynx and mouth during anesthesia.

The following conclusions, observations and rules may be accepted as definite:

1.—Action is definite and established in from 35 seconds to 5 minutes after intravenous administration.

2.—The dose administered is the same as for intramuscular or subcutaneous injection. The amount of atropine may be reduced, if desired, by 1/100 grain if no anesthesia is to be employed. A few patients complain of mouth dryness after this method of therapy. I, personally, have never reduced the atropine found in the ordinary hypodermic tablet, because such combinations are not manufactured and I have not felt that the amount of action from the atropine was particularly annoying. Obviously, the use of separate tablets of morphine and atropine would regulate the latter. The dissolving vehicle is water, and from 15 to 30 minims are employed. The solution is injected slowly in any convenient vein. The usual rule of skin cleansing with alcohol, preceded by painting the area with iodine, is all that is necessary and is absolutely safe.

3.—Vomiting and nausea are much less common after intravenous administration than after the other methods.

4.—Overaction is neither encountered nor need be feared.

5.—Action lasts from 3 to 12 hours, depending upon the pathosis present, and is definitely smooth, if one may use that word.

6.—Embolization has never been experienced in my series.

7.—Young's rule for children and regulated doses for the aged, together with a little personal judgment in other instances, is indicated in this method of therapy.

8.—In conclusion, the value of this method of administration has been so dramatically

*Formula No. 1: Hyoscine hydrobromide, gr. 1/100; morphine hydrobromide, gr. 1/4; cactoid, gr. 1/60. Formula No. 2 is half this strength.

and satisfactorily demonstrated to me as to leave no doubt of its superior efficacy over the others.

E. NEWTON TURKUS.

Long Beach, Calif.

Acid Urine Is Bactericidal*

THE old idea that, in inflammatory conditions of the urinary tract, the urine should be made alkaline, is rather thoroughly exploded. In fact, it has been found that a highly acid urine is bactericidal, even without the addition of any of the popular urinary antiseptics, such as methenamin.

Urinary acidity produced by a ketogenic diet works more powerfully and quickly than that resulting from the administration of such drugs as ammonium chloride and ammonium nitrate; but the important thing is that the acidity should be of high degree (pH 5.5 or, better, 5) and that it should be produced as rapidly as possible and maintained until the urine is completely sterilized. The organism causing the infection must be known from the start and must be entirely eliminated.

HUGH CABOT, M.D.

Rochester, Minn.

Roentgenotherapy in Diabetes and Hypertension†

THE pancreatic hypothesis of diabetes mellitus is not supported by clinical and pathologic evidence; and we have no rational hypothesis in hypertension.

My idea (supported by the work of many others) is that carbohydrate metabolism is controlled by a balanced mechanism, consisting of the pancreas, the pituitary and the adrenals; that hypoinsulinism results from too much of the balancing factors (pituitary and adrenal secretions); and that the logical treatment is the reduction of these secretions.

No lesions can be discovered in the pancreases of most patients dying of diabetes, and insulin is present, not only in the pancreas, but elsewhere in the body, in such cases. The same is true in cases of hyperinsulinism; and injections of pituitary extract relieve the symptoms better than anything else.

Worry, fear, anger and excitement—the same factors which stimulate the adrenals—aggravate diabetes and raise blood pressure. A good many diabetics show evidences of excessive growth hormone (pituitary) and deficient sex hormone, and improve when the latter deficiency is corrected.

*Surg. Gyn. & Obst., Aug., 1933, p. 265.

†Illinois M. J., Dec., 1933.

Adrenal tumors are frequently associated with hypertension; and French workers have relieved such patients with x-ray treatments to these glands. Herrick describes the victims of hypertension as an endocrinologist would describe a case of pituitary and adrenal excess.

It is believed that x-ray treatment, applied to the suprarenal glands, can restore to more nearly normal levels the functions of those organs and the pituitary; and cases of diabetes and hypertension have been treated with success along this line. Great conservatism has been employed and the most satisfactory dose factors have not yet been fully determined, but the method seems so promising that further work should be done, which will soon prove or disprove the validity of this theory.

JAMES H. HUTTON, M.D.

Chicago, Ill.

Chloroform and Ether in Cancer

ABOUT eighteen years ago, I performed a laparotomy, using ether for the anesthesia, upon a middle-aged woman, for ascites, caused by carcinoma of the abdominal structures and peritoneum. A small piece of the tissue was removed and examined by the late Dr. A. S. Warthin, who reported a very malignant type of carcinoma, arising in some misplaced fetal tissue. The patient was sent home to die, but she recovered, and to my knowledge for ten years she was alive and in good health without the aid of x-ray or radium therapy. The death of the referring physician caused me to lose track of this patient.

In reviewing the literature on this subject, I found several reports of spontaneous cures of inoperable carcinoma. No plausible explanation was advanced except that, in some way, the body's own resistance to the advance of the neoplasm was stimulated and the carcinoma was checked or overcome. The improvement, so frequently seen in these cases of advanced carcinoma, following operations as palliative measures, has usually been explained as improvement in general health, due to hopeful mental attitude. Although this may play a part in the patient's improvement, it seems improbable that this is the whole explanation.

Dr. Robert Benner, of Tiffin, Ohio, has advanced a unique and entirely different explanation for these spontaneous cures or improvement in cancer patients, suggesting that the apparent cures are due to changes in the body tissues and fluids, resulting from the chloroform or ether narcosis used during the operations. His theory merits consideration, for it is possible to perform experiments on animals, with a pathologic check, that

should prove or disprove the correctness of his idea. If he is correct, this theory might lead to a method of treating patients with advanced carcinoma.

HOWARD H. CUMMINGS, M.D., F.A.C.S.
Ann Arbor, Mich.

[The article by Dr. Benner, in this issue, and this comment by Dr. Cummings, convey an interesting theory and suggest that those who have had similar experiences would do well to report them.

If the acidity of the body fluids, produced by the ether or chloroform, are responsible for these results, there may be a sound basis for the alleged cures of cancer by the intravenous injection of dilute solutions of hydrochloric acid, of which we have heard but have never seen formally reported.—Ed.]

Whooping Cough Treatment by Vaccine*

AMONG colleagues who have failed with vaccines I have found that the tendency is to give even less than the recommended doses. To get results it is necessary to give at least five times the ordinary amount. I gave these large quantities to some 60 cases last winter, without any ill effect beyond a slight reaction when using ordinary vaccine.

I am persuaded that by the use of vaccine the period of the disease is shortened, and there is a marked diminution in the number of spasms in the twenty-four hours, and in the severity of the individual spasms. I think that better results are obtained with ordinary vaccines—that is, non-detoxicated—but I do not feel quite convinced of this. Since I started to use these large amounts I have never treated a case in this way without definite benefit.

R. W. COCKSHUT, M.B.

Ovarian Therapy in Hemophilia†

HEMOPHILIA is the most hereditary of all hereditary diseases; its transmission is sex-linked, the disease being manifested only in males, while it is transmitted through females. During the past two years my associates and I have had the opportunity of studying 35 persons with hemophilia, ranging in age from newly born to 52 years. Seven (7) of these cases were sporadic, while 28 had a definite family history.

The histories of 20 families (consisting of four to seven generations) were traced and their analysis showed that persons with

hemophilia have more daughters than sons, while transmitters have more sons than daughters. Over 71 percent of the transmitters' sons had hemophilia. Only from 10 to 15 percent of the transmitters' daughters had at least one normal son and hemophilic sons. Of the hemophilic daughters, only from 3 to 7 percent had at least one normal son and no hemophilic sons.

Nineteen (19) of the patients have been receiving ovarian therapy for more than six months; 9 of these showed a good response; 9 showed definite but less marked improvement; the condition of one remained unchanged. The response was both general and specific. The general improvement was shown by an increase in weight, hemoglobin and vitality; the specific response was shown by a decrease in number and severity of the hemorrhages and a lowering of the coagulation time.

The prolongation of the coagulation time in hemophilia is due to increase in the resistance of the blood platelets, for when this resistance is overcome mechanically, the blood clots in normal time. When certain ovarian preparations are added to hemophilic blood in a test tube, the coagulation time is decreased to one-fourth or one-half the time of the untouched control.

The blood of a person with hemophilia is morphologically normal. Patients with hemophilia are relatively safe if the coagulation time does not exceed one hour.

C. L. BIRCH, M.D.

Chicago, Ill.

Amebic Dysentery in Chicago*

AN OUTBREAK of amebic dysentery serious enough to warrant energetic control measures was reported in Chicago early in November. Publicity about the situation at that time suggested a sudden outbreak which had just manifested itself. As a matter of fact the disease had been present in Chicago during most of the summer of 1933. It is a disease by no means uncommon in Illinois. In 1926, for example, 39 cases of amebic dysentery were treated at the Cook County Hospital, these patients being among the victims of an outbreak in that year which was investigated by Kaplan. It may be stated that amebic dysentery is spread in much the same way as typhoid fever and that control measures effective against typhoid are effective likewise against amebic dysentery.

So common is the organism which causes amebic dysentery that fully one in each 10 normal persons is a carrier of the parasite. Most people enjoy a very high degree of resistance to the disease and illness occurs

*Brit. M.J., Nov. 4, 1933, p. 819.

†J.A.M.A., Nov. 5, 1932.

*Illinois Health Messenger, Dec. 1, 1933.

only after repeated exposure to massive doses of the organism. The organism is spread through foods and drink handled by careless carriers of the germs. Strict personal cleanliness on the part of all food and drink handlers and the use of only pasteurized milk is therefore quite effective in preventing the spread of this infection.

Amebic dysentery is primarily a disease of tropical countries, but is by no means rare in temperate zones. The active amebae which cause the cases are unable to infect others, because they die shortly after they are passed with the bowel movement. The resting stages, called cysts and pre-cysts, are the infective agents. The cysts, which may be passed by the million in the stools, remain alive, under favorable conditions, for several weeks.

The active case of amebic dysentery usually does not excrete cysts. It is the "carrier" and the light case who are most dangerous. Carriers are those who do not have symptoms of amebic infection but continue to harbor and excrete the parasites. Studies of large numbers of supposedly normal people have proved that about ten percent of all residents of these United States are carriers of disease producing amebae.

Food may be contaminated either by using human excreta for fertilizer (which is forbidden by law but probably still occurs), or by excreta on the hands of carriers. Water may also be a spreader of amebic cysts, if it is polluted by human dejecta.

Flies and other insects are known to carry the parasites to food or dishes and should, therefore, be rigidly excluded or, even better, destroyed by some of the well-known methods.

Anticolibacillary Serum in Surgery*

I HAVE shown that *B. coli* has the power to secrete two toxins—a neurotropic exotoxin and an enterotropic and hepatotropic endotoxin; also, that the organism may, in man, cause conditions of great clinical gravity. The two different toxins explain the variations in colibacillary infections. The exotoxin causes the associated nervous troubles; the endotoxin the jaundice, liver atrophy or diarrheal crises that occur. I have developed an antitoxic and anti-infectious anticolibacillary serum, which is the surest and most efficacious treatment for any colon bacillus infection. It brings about rapid recovery in septicemia, cholecystitis, suppurative pyelonephritis, chronic enterocolitis, paralysis, etc., due to *B. coli*.

In affections of a surgical nature, the serum is just as effective. The usual indications for it are gangrenous appendicitis with perfora-

tion and peritonitis; septicemia of appendicular origin; iliac, perisigmoidal and perirectal abscesses; and septicemia following operations on the prostate. These conditions are due to *B. coli* in most instances. In treatment I use or advise from 60 to 100 cc. of colibacillary serum, subcutaneously, as the first injection. Thereafter, 40 cc. may be given every four hours, as necessary. In children the dose is 40 cc. and in infants 20 cc., repeated as necessary. In addition to injection, I use it by introduction into the field of operation. In cases complicated by anaerobes I also use multivalent antigangrenous serum in 20 cc. doses, decreased as indicated; and in streptococcus complications I used my new antistreptococcic serum.

In gangrenous appendicitis I use anticolibacillary serum, alone or with multivalent antigangrenous serum, before operating and afterward, as indicated. As a prophylactic in operations on the infected urinary tract, I use 20 cc. of the colibacillary serum on the day before operation, the day of operation and the day after.

In all conditions mentioned, excellent results have been obtained by myself and my friends and colleagues. From expected death, cases have been carried on to recovery.

LIEUT. GEN. HYACINTH VINCENT.

(Translated by Edgar Erskine Hume.)

Paris, France.

Maternal Injuries from Mechanical Factors During Pregnancy and Labor*

THE longer I practice obstetrics, the more I am convinced that it is not the baby passing through, but rather the reprehensible efforts expended in forcing or pulling it through that result in cervical injury. In a straightforward, unassisted labor the cervix should seldom, if ever, be grossly injured.

Since the abandonment of manual exploration of the vaginal canal and the substitution of rectal examination, my associates and I rarely see an injury of the cervix of an extent sufficient to call for correction.

It is not possible to guess how much the practice of vaginal manipulation has cost in morbidity and mortality; it is still a fruitful cause of trouble. With less vaginal manipulation, both manual and implemental, so poignantly expounded in the teaching of obstetrics today, the incidence of injuries of the cervix should gradually be reduced tremendously.

P. BROOKE BLAND, M.D.

Philadelphia, Pa.

*Military Surgeon, Feb., 1933.

*J.A.M.A., Dec. 3, 1932.

Maggot Therapy in the Treatment of Pyogenic Infections*

THE development of maggot therapy upon a scientific and practical basis is credited to Dr. W. S. Baer, of Johns Hopkins University, who announced his maggot treatment for chronic osteomyelitis in 1930. Not all maggots are suitable for use. Those of the bronze-green blow fly (*Lucilia sericata* or *L. caesar*) are quite efficient and convenient to handle.

From the use of maggot therapy in 56 cases, we have learned that it is essential to select healthy-appearing and active 48-hour-old larvae, in order to have the greatest degree of activity within the wound; that conditions within the wound must be ideal for their best performance; and that continuous drainage of the wound is very important in preventing the accumulation of products of liquefaction necrosis. The larvae will attack almost any type of abnormal viable structure, including malignant tissue. Hemorrhage has not occurred from larval activity, in any of our cases. It is necessary to have surgically sterile maggots in order to prevent infectious complications.

Our results compare favorably with those of others. Our cases have included 28 cases of all types of osteomyelitis, and 28 cases of infection, including felon's, tuberculous adenitis, cellulitis, infected abdominal incisions, infected amputation stumps and gas bacillus infection. There has been one death in each series of 28 cases, with complete recovery in 27 of the second series and recovery or marked improvement in 27 of the first series.

We have found that our results compare favorably with those of any other form of treatment and, in most instances, are far superior. Maggot therapy is outstanding in the treatment of gas bacillus infection and other soft tissue infections. We feel that considerable work must be done yet, however, to place the treatment on a practical basis.

DRS. WEIL, SIMON & SWEADNER.

Pittsburgh, Pa.

Simple and Efficient Method for the Removal of Gastric Content†

MY experience in gastric intubation has been extensive. I have had occasion to apply the various methods now in use, but find the method which I have devised more simple and advantageous. The outstanding features of this method are as follows:

1.—The operator stands directly in front

of the patient, the tube resting on the fingers of both hands, the thumbs of either hand grasping it.

2.—The tube is pushed gently and rapidly with the right hand, until the first mark thereon is reached.

3.—The patient holds a container in his lap to inhibit the use of his hands; also, he is directed to bite on the tube after its insertion, to divert his attention, and thus prevent his clutching and withdrawing same.

MOSES EINHORN, M.D.

New York City.

Treatment of Prostatitis by Injection*

IN the treatment of prostatitis the plan presented itself to us of applying mercurochrome directly to the interior of the infected prostatic gland and putting it in a pitched battle with the infection at the site, rather than by counter-march. It seemed reasonable that, granted mercurochrome had an antiseptic value on tissue itself, it would perform its function if placed in contact with the infecting organisms.

We first fill the bladder with water, then introduce, through the perineum, with the patient in the lithotomy position, a 6-inch, 22-gauge needle, having a guiding finger in the rectum. By this procedure the needle can be directed with absolute accuracy into the prostate for whatever distance we wish. Care is taken to keep to the middle line and by close adherence to the rectal wall the possibility of injuring the bulb is avoided. The needle can be felt to pass through the prostatic capsule by the definite increase in resistance and, once it is through, the point can be directed to the portions of the gland at will. The hub of the needle is then attached to a Loktite syringe and a freshly made 1-percent solution of mercurochrome injected into the gland. The amount of fluid injected is gaged by the pressure felt. As the needle is withdrawn a light flow of the fluid is maintained, to sterilize the tract it makes in the perineum. From 10 to 20 cc. of mercurochrome is injected at various points throughout the gland, accompanied by a gentle massage of the prostate.

We have over 400 cases so treated on record and, so far, have not had a single untoward result. A few patients have been injected two or three times. The secretion from the prostate remains stained with mercurochrome for from 2 to 5 weeks after injection.

The immediate and end results have been most gratifying to us. All cases are not improved, but our percentage of cures, both from a clinical and laboratory standpoint, has

*Am. J. Surg., 19:36, Jan., 1933.

†Med. Times and Long Island M. J., Feb., 1933.

*J. Urol., 29:749, June, 1933.

been high. One of the most satisfactory features of this treatment has been the rapid clearing up of infections of long standing.

OWSLEY GRANT, M.D.

Louisville, Ky.

Theelin in Gonorrheal Vaginitis in Children*

THE injection of the estrus hormone, Theelin, causes rapid proliferation and "building up" of the vaginal epithelium of immature female monkeys, so, since the treatment seemed sure to be harmless, it seemed worth while to try it in order to overcome the conditions which make gonorrheal vaginitis such an intractable condition in female children.

Eight (8) patients so infected were given 1, 2 or 3 hypodermic injections of 50 rat units (R.U.) of Theelin, daily, in the arm or leg, over a period of from 10 to 31 days—a total of from 850 to 8,450 rat units per case being given. No irritation nor unfavorable symptoms developed.

All but one of these 8 cases were clinically cured; the one case received a minimum of treatment and, after apparent clinical cure, relapsed.

This is merely a preliminary clinical report, but the results suggest more extensive investigation. Small doses, frequently repeated, give best results. It may be possible to administer the Theelin by mouth.

ROBERT M. LEWIS, M.D.

New Haven, Conn.

The Role of Vitamin B in Diabetes†

IN ANIMAL experiments, vitamin B plays an important part in carbohydrate metabolism. Animals fed on a diet deficient in vitamin B show disturbances of carbohydrate metabolism similar to those of diabetes; while animals receiving an excess of vitamin B store an excess of glycogen in the liver.

On the basis of these findings and the results reported by others with the use of vitamin B in diabetes, we have treated 11 cases of diabetes with a vitamin B preparation in powdered form, given by mouth. In all these cases the disease was of a severe form; the diet was carefully regulated and weighed. In 8 of the 11 cases the use of vitamin B resulted in a marked diminution of the glycosuria and in an increase in the carbohydrate tolerance. In these cases, with 15 Gm. of the vitamin powder daily, the increase in carbohydrate tolerance ranged from 25 to 66.83 Gm., in an average of forty days; in 5 cases

the glycosuria was reduced from the first; in the other 3 cases more gradually.

As the improvement with vitamin B is slow but progressive, insulin should be given in full doses when the treatment is first instituted; with the continued use of the vitamin preparation, the dose of insulin can be much reduced, or it may be stopped entirely, according to the severity of the disease. In one case in which there was no reduction of the glycosuria, there was, nevertheless, a stabilization of the carbohydrate metabolism, so that the patient did not have repeated hypoglycemic reactions as previously. In the other two cases that showed no improvement, the disease was of a severe type and the period of observation relatively short.

DRS. M. LABBE, F. NEPVEUX AND
J. D. GRINGOIRS.

Toxicity of Acetanilid*

THE toxicity of acetanilid has been exaggerated. We have investigated the effects of acetanilid, plus caffeine and alone, on animals, and find no basis for the wide belief that caffeine increases the toxicity of acetanilid. Mice receiving daily, in their drinking water, 50 percent of the fatal hypodermic dose of acetanilid and 20 percent of the fatal hypodermic dose of caffeine showed practically no effects from the drugs. The enormous dose of 650 mgm. per kilogram body weight, with their food, served only to delay growth in mice. Caffeine seemed only to lessen the toxicity. After six weeks the animals were placed on normal diet and rapid gain in weight followed. A dose of 325 mgm. of acetanilid, plus 62 mgm. of caffeine, per kilogram of body weight per day, had little or no effect on growth.

In rabbits, the fatal dose of acetanilid is about 1.5 Gm. per kilogram. In anesthetized dogs, fatal doses cause respiration to stop before the heart does. In therapeutic amounts caffeine would not add to the toxicity of acetanilid.

DRS. HIGGINS AND MCGUIGAN.

University of Illinois.

Progress in the Nutrition of Infants‡

ALL major problems of artificial nutrition have now been solved. The results, under most skilful direction, closely approximate, perhaps equal, those of successful breast feeding, not only in gain in weight, tissue turgor, color and vigor, but in resistance to and recovery from infection.

*A. J. Obst. & Gynec., Oct., 1933.

†Bull. de l'Acad. de méd., 109: 689, May 23, 1933 (Med. Times and L.M.J., 41: 315, Oct. 1933—Abs.)

*J. Pharm. & Exp. Ther., July, 1933.

‡J.A.M.A., July 23, 1932.

The crusade in recent decades for maternal nursing was justified by comparison of mortality and morbidity statistics; but modern conditions have changed the physical life of primitive woman to one that is largely mental and emotional and the mother, today, is rarely of the contented, bovine variety.

We are not likely to improve on "nature's specific food"—mother's milk—but, granted a skilled pediatrician to prescribe and an intelligent mother to prepare the formulas, one's conscience need trouble one less than heretofore if the mother with sore nipples or an inadequate supply is relieved from a long-continued, unhappy effort to supply a portion of her baby's food.

J. I. DURAND, M.D.

Seattle, Wash.

Ringworm and Trichophytin*

THE relatively recent increase of the skin conditions known as dermatophytosis and dermatophytid has arrested the attention of the medical profession. From our personal experiences, and following a study of the subject, we have reached the following conclusions:

1.—The recent increase in the number and gravity of tinea infections of the glabrous skin makes it expedient to consider their immunology and the immunologic means of combating them.

2.—Trichophytin, a vaccine prepared from fungi, is used in these immunologic studies.

3.—In epidermophytosis and epidermophytids (tinea infections of the feet, the hands and occasionally other parts of the body), the "ids" are secondary eruptions due to dissemination of the harmful agents from the primary focus. They are usually free from living fungi.

4.—The "ids" in this form of tinea are most frequently of eczematous nature. This eczematous hypersensitiveness of the skin has been proved by patch tests.

5.—Other forms of trichophytin hypersensitiveness exist; they include urticaria, hay-fever or vasomotor rhinitis, asthma and perhaps generalized exfoliative dermatitis and other conditions. In consideration of this fact, trichophytin tests should be employed in investigating cases of the common allergic manifestations of unknown etiology. The fact that this particular allergen is almost ubiquitous makes such tests seem essential.

6.—At least three different types of skin reaction to trichophytin tests have been noted: (a) the immediate urticarial reaction (with circulating antibodies); (b) the late inflammatory reaction after intradermal in-

jection; and (c) the eczematous reaction to a patch test.

7.—Demonstration of circulating specific antibodies has shown that certain types of trichophytin hypersensitiveness are allergic.

8.—Since the dermatophytids are, today, usually the most important therapeutic problem in the common tinea infections (the actual foci are generally insignificant in extent) and since these "ids" are dependent on the hypersensitiveness of the skin for their existence, attempted desensitization therapy is indicated.

9.—In 18 cases of probable "ids," desensitization, by means of intradermal injections of trichophytin, was attempted. While complete or relative desensitization was achieved in 15 cases, only about two-thirds of this number seemed benefited by the treatment, these showing either long remissions, marked improvement or apparent cure.

10.—The method we have employed is by no means suitable for general treatment. At present, we can recommend it only as an ultimate measure in severe and refractory cases occurring in cooperative patients. Nevertheless, the results do not discourage further attempts in this direction. Modifications of our methods may improve the results.

DRS. M. B. SULZBERGER and F. WISE.

New York City.

An Appraisal of Antirachitics in Terms of Rat and Clinical Units*

SOME three years ago Hess, Lewis and Rivkin observed that the potency of one antirachitic could not be expressed interchangeably in terms of another: for instance more "rat-units" of viosterol than of cod-liver oil were found necessary to protect or cure infants of rickets.

These new studies were based upon "curative" doses, since the end-point determined radiologically was not open to question. The milk was subjected to irradiation for 16 seconds, and then contained 50 to 60 rat-units per quart. Milk from cows fed irradiated ergosterol was also employed, having values of 120 and 80 rat-units per quart, in different lots. The cod-liver oil was of average potency (37 to 40 units per gram), and the viosterol 80 rat-units per drop (250D).

It was found that the irradiated milk was the most efficient, 35 to 40 rat-units per day being required to confer protection or effect healing. Viosterol, on the other hand, required considerably more rat-units.

That some unknown factor is at work seems indicated by the fact that, when equally protective doses were given, a definitely

*J.A.M.A., Nov. 19, 1932.

*Hess & Lewis: J.A.M.A., 101:181, July 15, 1933.

larger number of units of the antirachitic factor were found in the blood of infants receiving viosterol. Evidently the clinical effect does not necessarily parallel the antirachitic content of the blood as tested on rats.

High Blood Pressure Not a Calamity*

HIGH blood pressure should be regarded as a warning. Its cause should be sought and treated. It has frequently been reduced by diet, attention to focal infections or by glandular therapy and, therefore, it may be assumed that faulty eating, infections and glandular dyscrasias are causes of hypertension.

The above-mentioned measures benefit the kidneys. They may lower the blood urea nitrogen and cause albumin and casts to disappear from the urine in mild cases of Bright's disease. They also operate against the most frequent causes of death among adults—heart, arterial and kidney diseases. They constitute the best measures for rejuvenation and life extension.

R. H. ROSE, M.D.

New York City

An Index of Therapy in Menstrual Dysfunction†

ZONDEK has shown that the follicle-stimulating hormone from the anterior pituitary gland (APH-A) is not found in the urine of normally menstruating women, but is found on cessation of ovarian function, in amenorrheas, during pregnancy and in genital carcinoma. Also, it is known that a woman, during her active sex life, except during pregnancy, excretes in her urine 10 to 20, rarely 30, rat units of estrin per liter of urine. Less than this normal excretion means hypofunction; more means hyperfunction.

On the basis of these known factors, I have attempted to classify menstrual dysfunctions. Four types of excretion are possible when both hormones are considered together, and these types furnish an index of the treatment. In 300 cases, the therapeutic results have been satisfactory.

R. KURZROK, M.D.

New York City.

**M. J. & Rec.*, May 4, 1932.

†*Endocrinology*, July-Aug., 1932.

The Therapeutic Use of Bacteriophage, with Special Reference to Staphylococcus Septicemia*

THE writer has used bacteriophage in the treatment of bacillary dysentery, typhoid, perirectal abscesses, cystitis, infected wounds, streptococcal septicemia, furunculosis and in staphylococcal septicemia. It is in this last-mentioned type of infection that I have seen such remarkable results—in 10 cases 9 recoveries followed the intravenous injection of staphylococcus bacteriophage; 5 of the cases were extremely severe and presented a grave prognosis; the remaining 5 cases were not severe and probably would not have been diagnosed as septicemia, except under the stimulus of routine blood cultures on febrile cases.

Systemic reactions seldom follow the subcutaneous or intravenous injection of staphylococcus bacteriophage, nor does any considerable local reaction develop. Stock bacteriophage was used. Not more than 2 cc., subcutaneously, was given. The only precaution is to insist on doses of not over 2 cc. subcutaneously, and 1 cc. intravenously. In our experience, no reactions attributable to peptone have ever been obtained.

L. O. DUTTON, A.B., M.S., M.D.

El Paso, Texas.

Cardiac Failure‡

ALL causes of cardiac failure are effective by reason of their action on the myocardium. It is almost safe to say that, in the treatment of these cardiac emergencies, reliance must be entirely placed on making the best of the existing myocardial power; what is not there cannot be put into it. The various stimulants in common use are no exceptions to this rule: strychnine, camphor and alcohol are held actually to increase the work done by the heart, but it is doubtful if they exert sufficient influence in this direction to make them actually harmful. Nitrates undoubtedly heighten the cardiac load by lowering arterial tension, but probably their value is partly due to a dilatation of the coronary arteries and the resulting flushing of the myocardium with oxygenated blood. Caffeine, diuretin and the like also exert this action on the coronary circulation and thus help to put into the cardiac wall something that would otherwise not be there.

CAREY F. COOMBS, M.D.

Bristol, Eng.

**Southwest. Med.*, Nov., 1933.

‡*Practitioner (Lord.)* Mar., 1933.

THUMBNAIL THERAPEUTICS

Treatment of Bronchopneumonias in Early Childhood

THE next problem in pediatrics is the successful treatment of bronchopneumonia in early childhood, which is still said to show a mortality as high as 80 percent.

Next to proper prophylaxis, frequent changes of position of the infant and the application of hot kataplasms, which will retain the heat for hours, are of greatest value, and also preparations of quinine, internally. This treatment was successfully applied in 50 cases, and Antiphlogistine seems to be the ideal method of applying continuous moist heat.—DR. KURT OCHSENIUS, in *Munch. Med. Wchnschr.*, Jan., 1930.

Evaporated Milk in Celiac Disease

THE fat in evaporated milk seems to be more easily digested by children with celiac disease than is that in fresh milk. The fat in the stools decreases on the evaporated milk diet; the patients are able to assimilate sugar in the form of banana powder or grain sugar; and relapses do not occur.—DR. C. V. RICE, in *Archiv. Pediat.*, May, 1933.

Inhibition of Diuresis by Hypnotics

PARALDEHYDE and sodium-phenobarbital reduce kidney action (in dogs) to from 12 to 26 percent of normal, for several hours. Metrazol will largely or wholly overcome this effect; and it does not cause convulsions.—DR. R. P. WALTON, in *Arch. Int. de Pharmacod. et Therap.*, 46: 97-104, 1933.

Nembutal in Lumbar Punctures, Convulsive and Manic States

IN *New England J. M.*, Aug. 11, 1932, Drs. S. H. Epstein and F. W. Marvin, of Boston, based on observation of 50 patients representing routine admissions to the Boston Psychiatric Hospital, state that pentobarbital sodium (Nembutal) is an efficient and safe sedative and produces profound narcosis when given intravenously. It provides a method of overcoming resistivity and obtaining cooperation in the performance of lumbar punctures in psychotic patients. It is of value in con-

trolling convulsions in epilepsy and overactivity in manic states.

Dosage varied from 0.2 Gm. to 0.5 Gm., according to the condition of the patient.

Hydrochloric Acid for Headache

FIVE to ten drops of 10 percent (by weight) hydrochloric acid in a glass of water gave immediate relief in a case of persistently recurring headaches.—DR. J. L. ST. JOHN, Pullman, Wash., in *Northwest Med.*, Mar., 1932.

Ephedrine in Adams-Stokes Syndrome

IN a case of Adams-Stokes syndrome, ephedrine, by mouth, stopped the seizures after barium chloride had failed. Continued oral administration of ephedrine has prevented further attacks over a period of 18 months.—DR. J. E. WOOD, University, Va., in *J.A.M.A.*, Apr. 16, 1932.

Insomnia

THE great majority of the patients who seek advice for insomnia and in whom no definite physical cause appears to be operative, have generally suffered for a long time before medical help is sought. Immediate relief is much to be desired and for this reason some form of hypnotic drug is nearly always required. The prescription of hypnotics should always go hand in hand with hygienic measures.

The most widely used hypnotics at the present time are those of the barbituric acid group. In general they may be regarded as not only harmless, but exceedingly valuable for occasional use; however, great caution should be exercised before allowing them to be taken for any long periods of time.—DR. A. FEILING, in *Practitioner*, (Lond.) July, 1932.

Oxygen Injections for Furuncles

OXYGEN injections have given very gratifying results in 100 cases of furuncles and paronychia. The oxygen, under high pressure ($\frac{1}{4}$ to 1 atmosphere), is introduced into the center of the furuncle through a sterile

glass cannula or fine injection needle. In the course of a day, 5 to 10 such injections may be given, as needed. The tissue of the furuncle softens with astonishing rapidity, so that the furuncle is emptied spontaneously within 24 to 48 hours. Furuncles of the nose and upper lip especially are cured with speed and leave no disagreeable complications.—Dr. C. SALZMANN, in *Schweiz. med. Wchnschr.*, Aug. 27, 1932.

Vitamin D for Adults

THE question is now being frequently asked me, whether adults should take a source of vitamin D as a safeguard to physiologic well-being. The only answer, in the light of available evidence, is that there is little room for doubt that an additional source of this vitamin, especially during the colder months of the year, affords a safeguard to health.—Dr. E. V. MCCOLLUM, in *"International Clinics,"* June, 1932.

Neothesisin

NEOTHESISIN is an odorless, white, crystalline powder, soluble in water, alcohol and chloroform. It is 15 times more effective than procaine on the rabbit's cornea. It appears to have no toxic properties in the strengths used.

Its use was found very satisfactory in 1,500 office and hospital cases requiring rapid urethral anesthesia.—Dr. H. W. E. WALTHER, in *J. Urol.*, Jan., 1932.

Lobeline in Urticaria

LOBELINE injected hypodermically in dose of 15/100 gr. (0.01 Gm.), and about half this dose for a child of 12 years, was found to give great relief in 6 cases of urticaria.—Dr. E. MOSER, in *Schweiz. med. Wchnschr.*, Sept. 24, 1932.

Syphilis

THERE are few diseases in which early and persistent treatment is as uniformly followed by good results as is the treatment of syphilis by the arsenicals.

The results following the use of neoarsphenamine, well diluted and given by the gravity method, are practically equal to those produced by arsphenamine.—Dr. J. P. THORNLEY, in *Arch. Dermat. & Syph.*, Feb., 1933.

Primary Glaucoma

IN an emergency, for controlling the intraocular pressure, one may resort by hypertonic solutions of magnesium sulphate or sodium chloride by proctoclysis, or intravenous injections of dextrose solutions. This, incidentally, is an excellent procedure to follow before operating, especially where the tension is high and choroidal hemorrhage feared.—Dr. M. GOLDENBERG, in *Illinois M. J.*, Oct., 1932.

Oxygen Therapy

IN those conditions associated with easily recognized anoxemia, and in the more obscure conditions as they are recognized, the use of oxygen must find its place. The time is at hand when oxygen must be given a trial in serious heart and pulmonary conditions. That carbon dioxide will supplement oxygen seems possible and it bids fair to be a valuable supplement.—Dr. W. H. PORTS, of Baylor University Coll. of Med., Dallas, in *Am. J. Med. Sc.*, Nov., 1932.

Insulin as an Appetizer

INSULIN will restore the appetite of the majority of patients suffering from the anorexia of chronic diseases. The average patient requires but one injection a day. The initial dose is 5 units, increased at the rate of 5 units a day, according to the patient's tolerance, up to 20 or 30 units at one subcutaneous injection. The injection is best given before the noonday meal.—Dr. O. S. JONES, in *J. Missouri S. M. A.*, Sept., 1932.

Vaccine Therapy in Chronic Arthritis

ABOUT 80 percent of the patients (301 cases) with chronic arthritis, who received five or more intravenous injections of a streptococcal vaccine, showed definite clinical improvement. The initial dose was 100 million organisms, cultured from a case of acute rheumatic fever. The dose was increased by 100 million at weekly injections. Not more than 8 to 10 injections were given altogether.

The results seem to justify a further study of such treatment.—Drs. B. J. CLAWSON and M. WETHERBY, of Minneapolis, in *Ann. Intern. Med.*, June, 1932.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, North Chicago, Ill., is accompanied by a check for the published price of the book.

Books are the legacies that a great genius leaves to mankind, which are delivered down from generation to generation, as presents to the posterity of those who are yet unborn.—ADDISON.

Gaskell: Origin of Life

WHAT IS LIFE? By Augusta Gaskell. Introduction by Karl T. Compton, Professor of Physics, Princeton University, and Raymond Pearl, Professor of Biology, The Johns Hopkins University. Springfield, Illinois: Charles C. Thomas. Price \$3.50.

From time immemorial, the question, "What is life?" has vexed scientists, but this is the first serious attempt to answer this question in terms acceptable to the spirit of the experimentalists. This delay, the author believes, is due to the fact that such an explanation was impossible except in the light of the discoveries in the field of atomic physics. That the present theory is consonant with the best thought in that science and in biology, is attested in the introductions by Compton and Pearl.

The general postulates of the theory are the modified Bohr ("Solar system") atom and a condition of a critical concentration of ions. Under such conditions, Gaskell believes that an $H_2 +$ ion, with one electron at aphelion, might collide with an electropositive ion at the critical moment, and that the nucleus more distant from the electron might enter into intimate union with it, forming a quantitative substance which is not an atom, and is therefore immaterial in the chemical sense (is life), but which, penetrating various surrounding atoms in the liquid medium, might pick them up, in whole or in part, to form a dual system (life and body), which behaves like an organism.

The author then proceeds to discuss life and death, the origin of species, heredity and other problems, in the light of this theory, in a convincing way, showing that the origin of life is or may be continuous and that man, instead of developing from lower forms, is probably the result of the formation of a wholly new "Z-pattern."

As an example of the scientific method, this monograph can hardly be improved upon. The chapter on the rating of a theory is masterly, and those on "Matter" and "The Atom" deserve study by all who aspire to keep abreast of modern scientific thought.

As usual, Charles Thomas has made a beautiful piece of bookwork. Paper, typography and binding are beyond criticism.

To those who enjoy the mental gymnastics of "hard" reading and the exhilaration that comes from thinking along fresh lines, this book is cordially recommended as a broadener of horizons.

Crowther: America Self-Contained

AMERICA SELF-CONTAINED. By Samuel Crowther. Garden City, N. Y.: Doubleday, Doran & Company, Inc. 1933. Price \$2.00.

In the early days of our country it was, perforce, self-contained. We used what we had, every family took care of itself and patriotism was popular.

With the development of our industries and agriculture, we began, more and more, to depend upon other countries for essential raw materials, and also for certain manufactured products, such as dyes and chemicals. The War taught us (if we have the power to learn from experience) the dangers of such a situation, but of late we have been flooded with propaganda to the effect that our prosperity, if not our national life, depends upon foreign trade, and that we have some sort of divine appointment to take care of and finance the whole world. Our thinking has been perverted by the doctrines of internationalism, and patriotism seems to be passé.

The research chemists and other students have now freed us from the necessity of slavery to the whims of foreigners and the vicissitudes of their politics, and world trade, on a large scale, bids fair to become a thing of the past.

In this volume the author puts before us the unquestionable statistics proving that the United States is now able to stand alone, along with valid arguments proving that it will be vastly to our advantage for us to do so, as well as highly dangerous for us to follow the trail of the internationalists. "Our choice is between abolishing the poverty that is in America, and the mingling of it with the

poverty of other nations . . . We have to choose for ourselves whether our people would be better off regulating their own destinies or having them regulated from the outside . . . The work of a century may easily be undone by accepting a false theory of national welfare and leading the people to their eventual destruction, in order that a few men may make money . . . We must either have a nation or not have one . . . The quality of our freedom will be measured by our ability to live within ourselves."

Quoting Washington's powerful, but now neglected, warnings against the dangers of foreign entanglements of all sorts, Crowther states bluntly (and proves it) that our present paradoxical position—the richest country in the world feeding millions of people by charity and doles and destroying food and crops in order to maintain the affluence of a small class—is the result of departing from the sound Washingtonian principles, and that our present problems will be solved by adopting an enlightened and self-contained nationalism. The home market is sufficient to make our citizens universally prosperous, if rightly planned.

All these statements are not made out of the air. The discussions of foreign trade, war debts, international bankers, tariffs and many other matters, about which most people emote rather than think, are so clear as to be readily understood by any high-school graduate, and so well documented as to carry conviction to any open mind. The chapters, "An American Policy," "The Home Market" and "The Price of Internationalism," should be made available to every voter in the land.

This book should be studied by every American who loves his country and believes in her, and who has sought (mostly in vain, among the clutter of alien propaganda) for the facts to justify that love and that belief. Those who read it can once more call themselves patriots—and be proud of that glorious title.

Hiscox: Formulas and Processes

HENLEY'S TWENTIETH CENTURY BOOK OF FORMULAS, PROCESSES AND TRADE SECRETS. Containing Ten Thousand Selected Household, Workshop and Scientific Formulas, Trade Secrets, Chemical Recipes, Processes and Money Saving Ideas. Edited by Gardner D. Hiscox, M.E. New Revised and Improved Edition. New York: The Norman W. Henley Publishing Company, 2 West 45th Street. 1933. Price \$4.00.

It is well known that many things which are sold for high prices can be made at home (if one knew how), much more cheaply and practically as satisfactorily. Among these are cosmetics, cleaning preparations, dyes, flavoring extracts, insecticides, perfumes, beverages and many others.

Moreover, in every household where thrift is still considered a virtue, scarce a day passes that some member of the family does not

want to find out how to do something about the house. Lacking such knowledge, an expert must be called in and paid for doing what the householder could have done if he had known how.

Henley's Manual is, perhaps, the greatest "how to do it" book in print. Information on almost any subject one may be interested in, in a practical way, may be found in its 800 pages, which are well indexed for quick reference.

On any physician's bookshelf, this volume will save many an hour, by furnishing unusual information promptly, and many a dollar and in addition will enable its possessor to answer many questions in a way which will endear him to his patients. It is an investment paying big dividends.

Bauer: Aviation Medicine

AVIATION MEDICINE. By Louis Hope-well Bauer, A.B., M.D., Major, Medical Corps, United States Army; Commandant, the School of Aviation Medicine. Published by Authority of the Surgeon General. Baltimore: The Williams and Wilkins Company. 1926. Price \$7.50.

So far as is known, this is the first book written on aviation medicine in America, and the first one written anywhere since the World War. An attempt has been made to consider all phases of the subject. Interest in aviation medicine is rapidly and steadily growing, and this book brings together the gist of a widely scattered literature; interwoven with the author's extensive experience. An attempt has been made to make the book sufficiently technical to be of use to the flight surgeon, but not too technical to interest the physician who has not worked in the subject.

Aviation Medicine is called the newest of the medical specialties and is said to have a future of untold possibilities. The specialty involves a knowledge of physiology and medicine, of ophthalmology and otology, of psychology, neurology and psychiatry. This work is divided into three sections. Section I deals with the selection of the flyer; Section II considers the physiology of aviation, including the classification of the flyer; and Section III is devoted to the care and maintenance of the flyer. The extensive bibliography covers 22 pages.

Concip Calendar

THE CONCIPI CALENDAR or Marriage Calendar. The result of the research of Prof. Dr. Knaus, of Austria, and of other distinguished scientists. Hobart, Ind.: The Concip Co., Distributors. 1933. Price: \$1.50.

References to the work of Dr. Knaus and other students of the periods of physiologic fertility and sterility have appeared several times in these pages.

This Calendar has been prepared to afford

women who desire to experiment with this method a ready and simple means for determining the sterile and fertile periods in each month. The standard type is for women who menstruate at intervals of 26 to 30 days, but other types are available, suitable for those whose intervals are longer or shorter.

While not yet convinced that the ideas of Dr. Knaus are by any means fully established, the evidence is sufficiently impressive to warrant its further study, and this Calendar will be of assistance to physicians who wish to carry on such researches. Full directions for use accompany each Calendar.

Surgical Clinics

SURGICAL CLINICS OF NORTH AMERICA. *Chicago Number. Volume 13, Number 5, October 1933. Philadelphia and London: W. B. Saunders Company. Issued serially, one number every other month. Per clinic year, February, 1933, to December, 1933. Prices: Paper, \$12; cloth, \$16, net.*

The October, 1933, number of the "Surgical Clinics of North America" consists of 23 papers, contributed by 20 of the leading surgeons of Chicago. The following medical schools are represented: University of Chicago, Northwestern University, Rush Medical College, University of Illinois, and Loyola University. The clinics begin with a symposium of eight articles on Important Surgical Operations in Children. Among the subjects considered are Intracranial Tumors; Congenital Pyloric Stenosis; Intussusception; and Congenital Dislocation of the Hip. Other individual papers include "Dermoid Cyst of the Thorax," "Everyday Knee Injuries, Excluding Fractures: Diagnosis and Treatment," "Imperforate Anus," and "Massive Bone Graft in the Treatment of Ununited Fractures, Repair of Defects in the Long Bones and Fusion of the Spine." Many of the papers are accompanied by excellent illustrations. The book contains 256 pages. The clinical material offered makes it of outstanding value.

Rose and Carless' Manual of Surgery

ROSE AND CARLESS' MANUAL OF SURGERY. *Fourteenth edition. Revised by Cecil P. G. Wakeley, D.Sc. Lond., F.R.C.S. Eng., F.R.S. Edin., Surgeon, King's College Hospital; Lecturer in Surgery, King's College Hospital Medical School; and John B. Hunter, M.C., Surgeon, King's College Hospital; Lecturer in Surgery, King's College Hospital Medical School. American (14th) Edition edited by W. T. Coughlin, B.S., M.D., F.A.C.S., Professor of Surgery and Director of the Department of Surgery, St. Louis University School of Medicine. William Wood and Company: Baltimore. 1933. Price \$9.00.*

This edition of Rose and Carless has been especially revised and rearranged to meet American needs. It presents, in orderly arrangement, a brief fundamental outline of

our present-day conception of those principles on which the science is built and of those surgical conditions and diseases commonly encountered in general practice.

Readers of this edition who are familiar with former editions will find that certain subjects are treated briefly and others entirely omitted, and of certain subjects only such parts as fall within the province of general surgery have been discussed. The explanation of this change is to be found in the fact that the British and American curriculums and methods are not the same. This text is intended to emphasize for the student the principles and science of surgery, rather than its practice and art. New material includes the treatment of malignant disease by radium, surgery of the sympathetic nervous system, thoracic surgery, Böhler's methods of treating fractures, and surgery of the kidney.

From a technical point of view this edition marks a considerable advance: the illustrations are greatly improved, both in color and definition; and a large number of new photographs and drawings have been prepared, and the whole of the radiographs, which have been added to considerably, are now distributed throughout the text instead of being grouped in an appendix. All in all, this edition of Rose and Carless presents the present status of surgery in a satisfactory manner for the use of students and general practitioners.

The Year Book of General Medicine

THE 1933 YEAR BOOK OF GENERAL MEDICINE. *Edited by George F. Dick, M.D., Professor of Medicine, University of Chicago; Lawrason Brown, M.D., Chairman of the Medical Board, Trudeau Sanatorium, Saranac Lake, New York; George R. Minot, M.D., Professor of Medicine, Harvard University; William B. Castle, M.D., Associate Professor of Medicine, Harvard University; William D. Stroud, M.D., Professor of Cardiology, Graduate School of Medicine, University of Pennsylvania; and George B. Eusterman, M.D., Chief of Section in Medicine, Mayo Clinic, and Associate Professor of Medicine, University of Minnesota. The Year Book Publishers, Inc., 304 South Dearborn Street, Chicago. Price \$3.00.*

This volume is one of the ten "Practical Medicine Year Books." It is divided into the following departments: Infectious Diseases, edited by Dr. Dick; Diseases of the Chest (excepting the Heart), edited by Dr. Brown; Diseases of the Blood and Blood-Forming Organs, and Diseases of the Kidney, edited by Drs. Minot and Castle; Diseases of the Heart and Blood Vessels, edited by Dr. Stroud; and Diseases of the Digestive System and of Metabolism, edited by Dr. Eusterman.

The purpose of this series is to review and abstract all pertinent articles published during the past year on diseases included in these various departments. Of special interest are the brief editorial notes, which explain, summarize or otherwise comment on each

article or series of articles on a given subject. They enable the reader to get the gist of the article readily. The "Year Book" is one of the most useful medical books published, as it enables one to review all pertinent literature without reading the scores of journals in which the articles originally appeared. It is the most economical and time-saving means of keeping up with medicine.

The 1933 volume contains 831 pages, yet is of convenient size for desk, car pocket or bag. It should be read or kept for reference by all students and practitioners of medicine. It covers all subjects, in the departments listed, in which progress has been made.

Stedman: Medical Dictionary

PRACTICAL MEDICAL DICTIONARY. Of Words Used in Medicine With their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms, etc. By Thomas Lathrop Stedman, A.M., M.D. Editor of the "Twentieth Century Practice of Medicine," etc. Twelfth Edition. Baltimore, Md.: William Wood and Company. 1933. Price: Plain edge \$7.00; Thumb indexed \$7.50.

Every physician must have a medical dictionary, and progressive doctors demand one that is up to date, because new words are being added to the vocabulary of medicine every day.

This twelfth edition of Stedman contains about 1,000 more titles and several hundred more subtitles than the eleventh edition, necessitating the addition of 33 pages to the work. Changes in the British Pharmacopoeia of 1932 are included.

Those who have this book at hand for frequent reference (and use it) may be sure that their professional writing and speaking will be accurate and as nearly up to the minute as is humanly possible, and will not be at a loss if, in their reading, they encounter one of the new words.

Howell: Medicine in Canada

MEDICINE IN CANADA. (Clio Medica Series.) By William Boyman Howell, M.D. Anaesthetist-in-Charge, Royal Victoria Hospital; Lecturer in Anaesthesia, McGill University, Montreal. New York: Paul B. Hoeber, Inc. 1933. Price: \$1.50.

The "Clio Medica" series* is a wholly painless method of administering medical history, in exactly the dose and form indicated in any particular case. All physicians need it.

Here is a pleasingly written story of the progress of Medicine in Canada, from the first outbreak of scurvy, in 1535, up to the latter part of the nineteenth century, ending with a brief biography of Dr. John Sebastian Helmcken, of British Columbia.

*See C.M.&S., Jan. 1933, p. 63, for comments on the series.

Fordyce: Trail Craft

TRAIL CRAFT. An Aid in Getting the Greatest Good out of Vacation Trips. By Claude P. Fordyce, M.D., Associate Editor, *Outdoor Life*; author of "Touring Afoot," etc. Cincinnati: Stewart Kidd Co., Pubs. Price: \$2.50.

Here is a book that is a practical and common-sense aid to all those who hear and answer the call of the wilderness, and enjoy the hardships and pleasures of life out of doors, whether they have had much experience or are novices.

Many phases of roughing it are carefully discussed, so that the greatest comfort may be enjoyed. From knapsacking alone to moving the whole family by car; camping in high altitudes, and practical mountaineering; desert travel and how to prepare for it; tents, how to use and how to make them; the waterproofing and use of balloon silk; etc. are some of the many items of open travel that are to be found in "Trail Craft."

A very necessary and detailed chapter is one titled "Taking the Place of the Doctor," where first hand information may be found on the efficient treatment of the ailments encountered on the wilderness trail.

The scourge of many outdoor trips is the attacks of insect pests. Dr. Fordyce says:—"Take an ounce of common Epsom salts and dissolve it in a cup of water; wet a bath cloth so that it will not drip, and rub the body well all over, and do not wipe afterward, but dress. Flies, gnats, fleas, bedbugs, mosquitoes, etc. will never touch you." Such useful information as this will be found in every chapter of "Trail Craft," which is aptly subtitled "An Aid in Getting the Greatest Good out of Vacation Trips." G.B.L., Jr.

Chideckel: A Doctor's Diary

STRICTLY PRIVATE! Being the Intimate Diary of a Medical Practitioner. By Dr. Maurice Chideckel. Boston: The Stratford Company, Publishers. Price \$2.50.

This is a volume of the kind of professional stories that doctors swap in the anterooms at medical meetings—little sections of the life of a general practitioner, told in a very direct way.

The author is deeply impressed with the horrors of venereal diseases, and frequently introduces illustrative anecdotes along this line. He does not, however, believe that tabes and paresis are syphilis, and his information is, in some other respects, not quite up to date; however, it is interesting and pungent reading and will awake memories in the mind of any active clinician.

This is a good book to keep at hand, to fill in brief periods in a busy day which would otherwise be unoccupied. It might not be a bad idea to loan it to some selected laymen, who need to know something about the problems a general practitioner has to meet.

MEDICAL NEWS



(c) Underwood & Underwood.

The Red Cross on Skis

IN Vogtland, Saxony, where heavy snowfalls are common and cause dangerous conditions, the Red Cross maintains a reserve corps of trained skimen, to act in such emergencies.

The picture shows a litter squad on runners, ready to answer a call for help among the snow drifts and avalanches.

Film of Contraceptive Technic

A MOVING picture film, presenting in 15 or 20 minutes the highlights of the development of contraceptive practice, is now available for showing before medical school classes and regularly organized medical societies. No charge is made for the use of this film, and a projector is sometimes furnished, also without charge.

Those who are interested should write direct to Holland-Rantos Co., Inc., 37 E. 18th St., New York City.

World-Wide Publicity

THAT readable and interesting little publication, *The Bloodless Phlebotomist*, which the Denver Chemical Mfg. Co., published on popularize Antiphlogistine, is printed in nine languages and sent to every physician in the world who has a known address, except in Russia, Lithuania and Bulgaria—1,260,000 copies of the latest issue, Vol. VIII, No. 1!

Opening in Idaho

IT IS REPORTED to us that there is a town in Idaho, with 1,800 people in the immediate vicinity (mostly engaged in dairying and agriculture), which has no physician nearer than ten miles, but has a good drug store. Further information can be obtained by writing to Mr. George H. Whitehouse, Kuna, Idaho.



(c) Ewing Galloway, N. Y.

The Rockefeller Institute

THE Rockefeller Institute for Medical Research, where much of the work which is advancing the science of medicine is being carried out, in cooperation with many other institutions and groups, now maintains regular departments of pathology, bacteriology, physical and pathologic chemistry, physiology, comparative zoology, pharmacology and experimental therapeutics. A hospital, under the direction of the Institute, is maintained, where various diseases are given close scientific study, under clinical conditions.

American College of Physicians

THE American College of Physicians will hold its annual assembly at the Palmer House, Chicago, April 16 to 20, inclusive, 1934.

This is one of the most important and valuable meetings of the year, and it is not too early for fellows and associates of the College to be making arrangements to attend. Full particulars may be had from E. R. Loveland, 133-35 So. 36th St., Philadelphia, Pa.